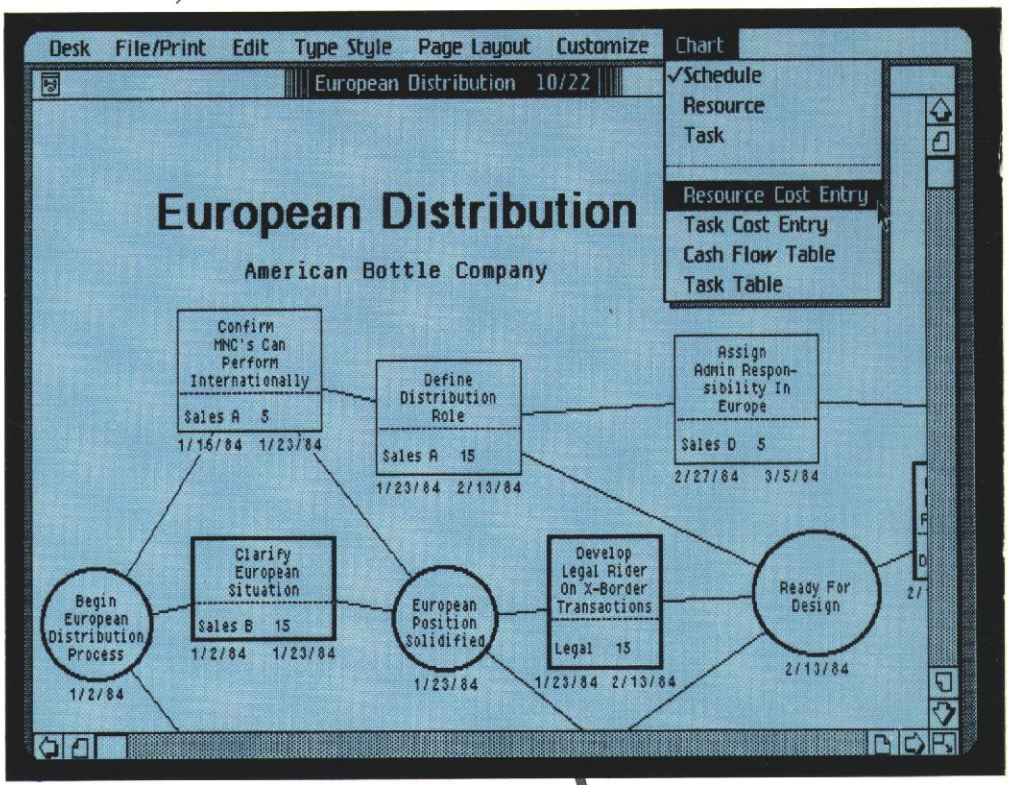
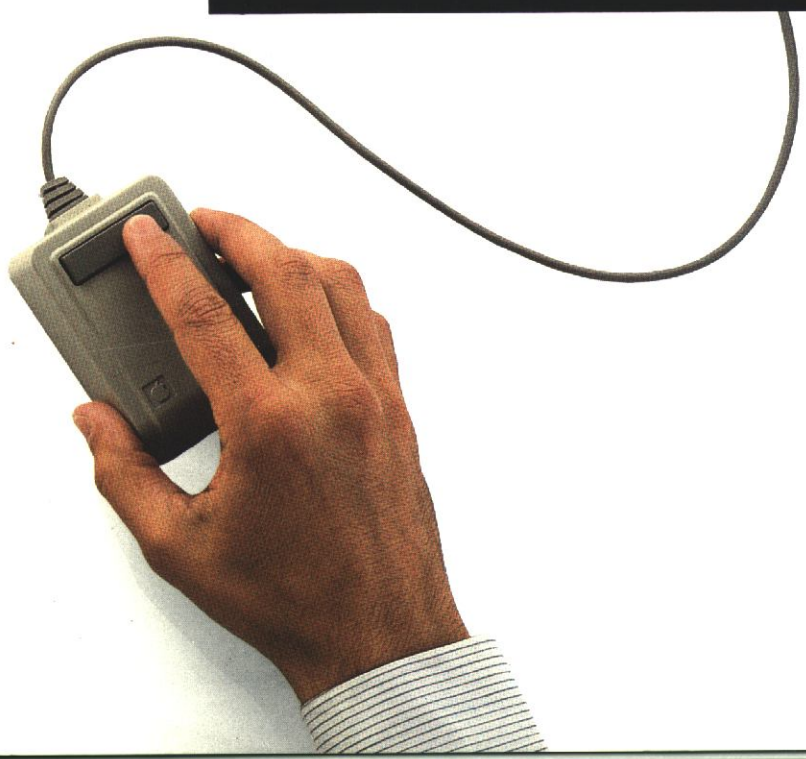
LisaProject





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Introducing LisaProject

LisaProject is a project management tool you use to calculate project schedules and costs. With LisaProject, you:

- Identify individual project tasks and chart their interdependence.
- Assign resources needed to complete each task and assign the amount of time required by each resource.
- Assign costs to each task and resource.

On the basis of this information, LisaProject calculates start and finish dates for each task and generates a cash flow table showing the cash flow over the duration of the project.

LisaProject represents each project with three charts: a Schedule chart, a Resource chart, and a Task chart. Using these three charts you can see the interdependence of project tasks, the effects of schedule and resource changes, and the status of the project on any given day. You can print these charts at any time to make them available to the project team and others in the organization.

Project costs for each resource and task are entered on the Resource Cost Entry and the Task Cost Entry tables. LisaProject uses this information to calculate overall project cash flow. In addition, all project costs and schedules are summarized on an individual task basis in the Task Table.

You can change project information whenever necessary. LisaProject instantly recalculates schedules and costs so that you can see the effect of the changes.

About this Manual

This manual contains three chapters.

- Chapter 1, Learning LisaProject, gives you practice using LisaProject by taking you step by step through an easy example.
- Chapter 2, Using LisaProject, contains detailed instructions for performing specific tasks with LisaProject and offers suggestions that help you use LisaProject efficiently and effectively.
- Chapter 3, LisaProject Reference, provides a summary of the LisaProject menus and tables, as well as complete information on LisaProject chart formats.

Each chapter begins with its own table of contents so you can easily look up different topics. If you can't find what you need in the table of contents, check the Index at the end of the manual. The Index lists many topics in several ways to help you find the topic you're looking for even if you're not sure what it's called.

The information in this manual assumes you've gone through LisaGuide, which teaches you how to use the mouse and explains special terms, such as *selecting* and *choosing,* that are unique to the Lisa. For instructions on starting Lisa, refer to the *Lisa Office System* manual.

Chapter 1

Learning LisaProject

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Getting Started with LisaProject

This chapter gives you actual practice with LisaProject. By going step by step through an easy example, you will quickly become familiar with the basic skills for using LisaProject to create, revise, save and print your own documents.

If you've already used another Lisa® tool, you'll see many similarities in LisaProject; the basic concepts for using each Lisa tool are the same.

Have You Gone through LisaGuide?

The Lisa Office System comes with a micro diskette called LisaGuide, which provides a self-paced tutorial on use of the Lisa desktop and the mouse. Before beginning the practice exercises given here, be sure you've gone through LisaGuide.

You should now feel comfortable with the special terms used in reference to the Lisa. For example, do you fully understand the special processes called *selecting* and *choosing?* If not, now is a good time to review LisaGuide once more. Refer to Chapter 1, LisaGuide, in the *Lisa Office System* manual for instructions on starting the LisaGuide micro diskette.

What You Need to Get Started

To do the practice exercise in this chapter, you'll need:

- A Lisa, set up and plugged in, with the keyboard and mouse attached. Make sure the Lisa is turned on.
- A printer, set up and plugged in, if you want to print your practice graphs. Make sure your printer is hooked up to the Lisa and turned on. Printing is optional.
- About 30 minutes.

If your system is not already set up and configured, refer to Appendix A, Setup Procedures, in the *Lisa 2 Owner's Guide.*

Seeing What's on a Disk

To get at the document you'll work with, you first need to open the Disk icon as described in the steps below.

The way you open the Disk icon illustrates your Lisa's most general principle:

- First you select something.
- Then you do something to what you've selected.

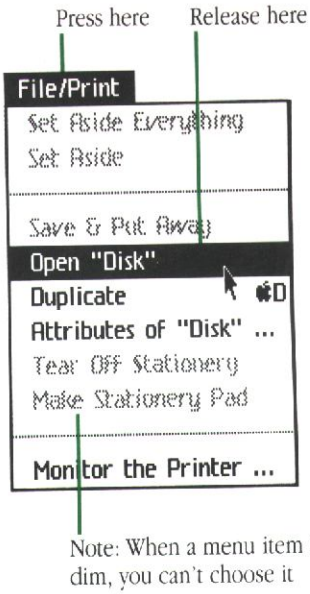
To Open a Disk:

1 ▸ Select (highlight) the Disk icon by placing the tip of the pointer on the icon and clicking the mouse button as shown. (Icon not highlighted? Try again.)

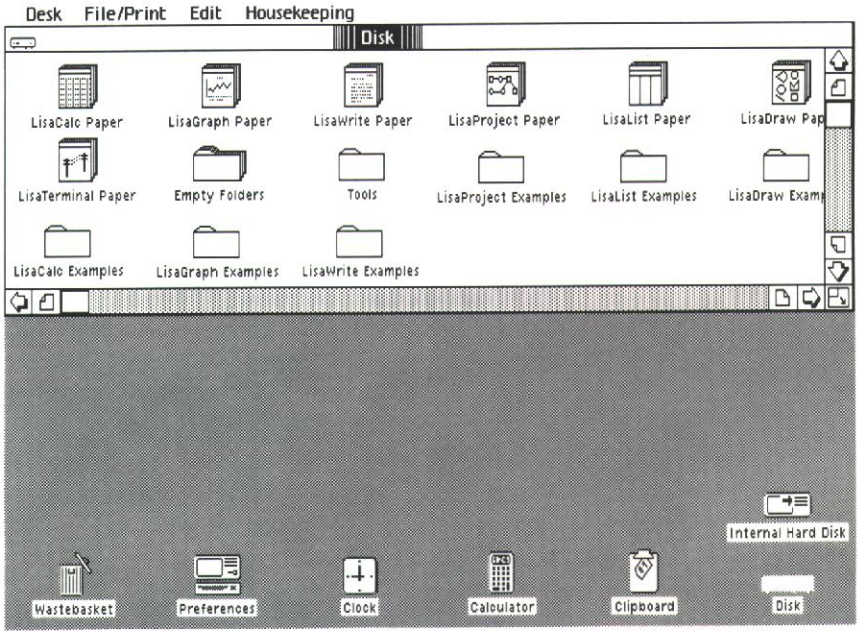
2 ▸ Open the selected Disk icon by choosing **Open "Disk"** from the **File/Print** menu. Here's how:

a. Press and hold down the mouse button, with the pointer's tip on **File/Print** in the menu bar.

b. Move the pointer down and release when **Open "Disk"** is highlighted. (Is the **Open "Disk"** menu item dim? You probably clicked somewhere else on the gray part of the screen and deselected the Disk icon. Go back to step 1 and make sure the icon is selected.)



3 ▸ Notice how the Disk icon window zooms open to show its contents on your Lisa's desktop. Your disk is like a very large file drawer; it's where you'll keep most of your work.



Pulling a Document

Inside the disk window you should see several stationery pads and folders. The Examples folder contains the example you'll be working on here. In the steps below you will:

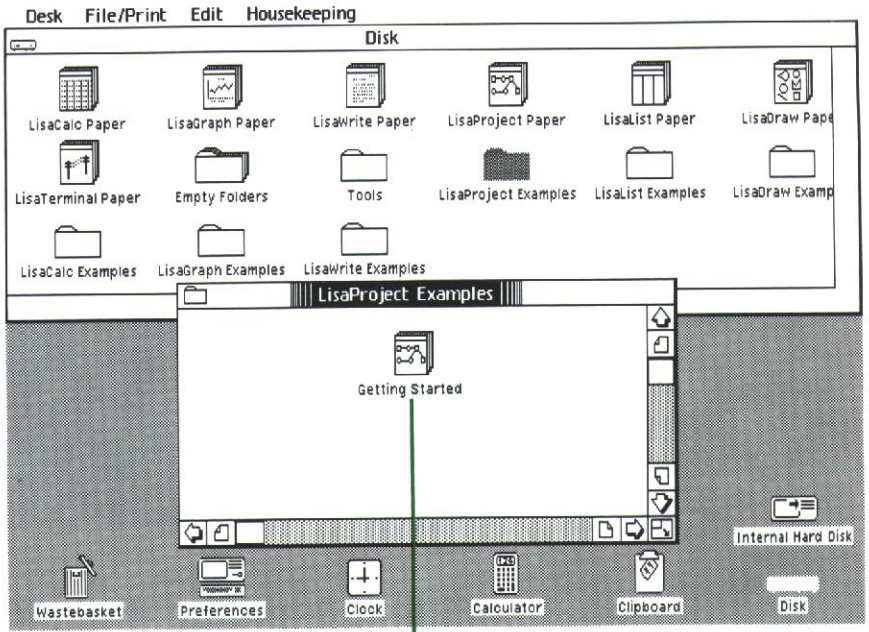
- Open the LisaProject Examples folder.
- Tear off a sheet from the Getting Started stationery pad that's inside the folder.
- Move the new sheet, or document, to a clear spot in the folder.
- Give the new document the name *Ad Schedule*.
- Open the document.

To Open the LisaProject Examples Folder:

1 ▸ Select the LisaProject Examples folder by clicking on it.

2 ▸ Open the **File/Print** menu and choose **Open "LisaProject Examples."**

Notice the window to the LisaProject Examples folder that zooms open, and its contents, as shown. The patterns on the icons in the folder show they are LisaProject icons.



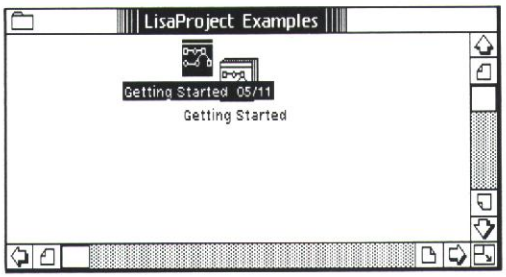
LisaProject icon

Copies of the Getting Started example are on the Getting Started stationery pad.

To Tear Off a Sheet from the Pad:

1 ▸ Select the Getting Started pad icon.

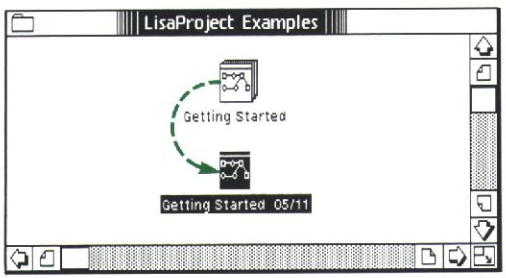
2 ▸ Open the **File/Print** menu and choose **Tear Off Stationery**. Wait a moment until the new document appears, as shown.



To Move the New Icon to a Clear Spot in the Folder:

1 ▸ Place the pointer on the icon.

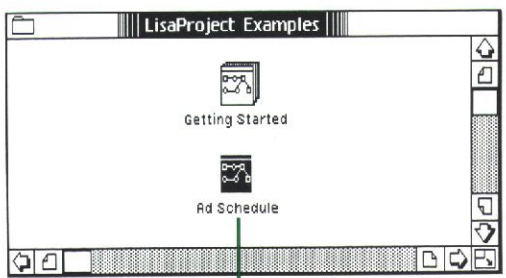
2 ▸ Press and hold down the mouse button and move the icon as shown; then release the mouse button.



To Rename the New Document:

1 ▸ Make sure the untitled document icon is still selected (highlighted). If you've deselected the icon by clicking elsewhere on the screen, select it again by clicking on it.

2 ▸ Type the name *Ad Schedule.* (Typing mistake? Use the Backspace key to correct it.)

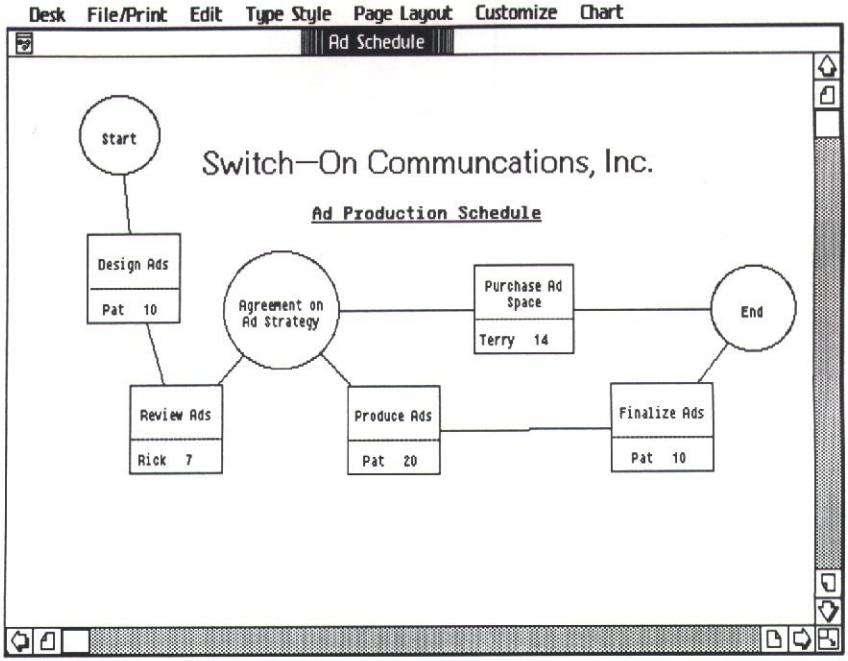


To Open the Ad Schedule Document:

1 ▸ Make sure the document icon is selected (highlighted).

2 ▸ Open the **File/Print** menu and choose **Open "Ad Schedule."**

Notice how the icon zooms open into a window. Wait a minute — the hourglass, ⧗, means wait — then the LisaProject tool displays the Ad Schedule document, as shown here.



The LisaProject Document

The Ad Schedule document is now open on your Lisa's desktop.

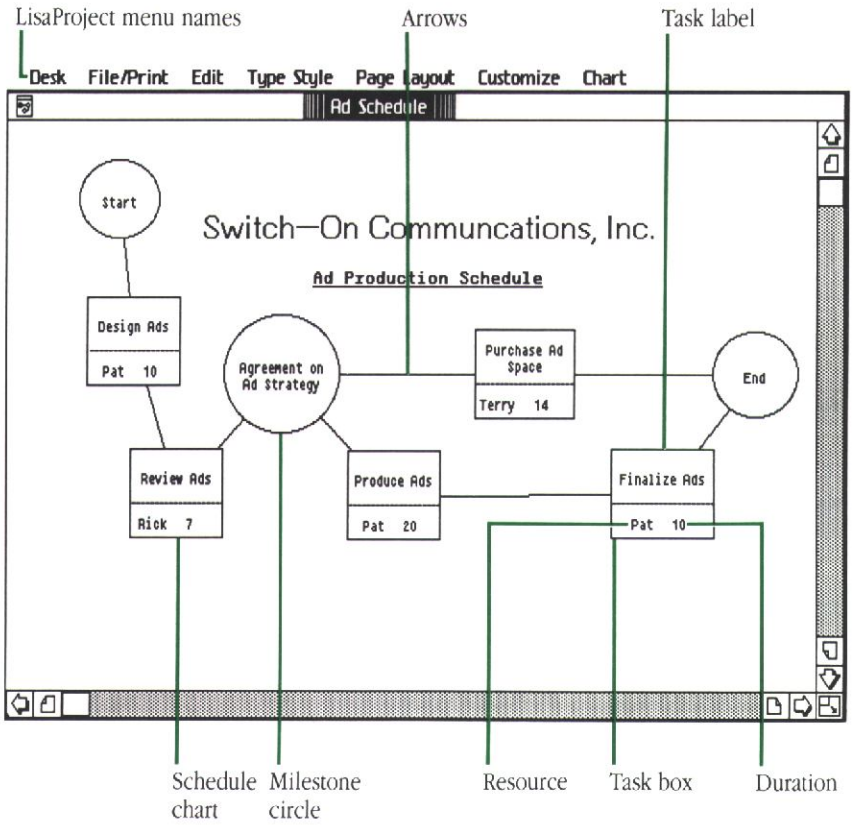
Across the menu bar at the top of the screen are the *LisaProject menu names.* Each menu contains a list of actions you can take with a LisaProject document.

The LisaProject Schedule chart is made up of *task boxes, milestone circles,* and *connecting lines,* called *arrows.*

Each task box contains three pieces of information: The name of the task, the name of the person responsible for the task, and the estimated number of days to complete the task. For example, the resource person responsible for the task labeled *Finalize Ads* is named *Pat,* and the estimated duration of the task is *10 days.*

Unlike task boxes, milestone circles do not contain resources or durations. A milestone typically indicates a major step in the completion of a project. For example, Agreement on Ad Strategy is a milestone.

The connecting lines, called arrows, show the dependencies among the tasks and milestones and indicate that the task or milestone on the left must be completed before the one on the right can be started. For instance, there must be agreement on the ad strategy before ad space can be purchased and ad production can begin.



Without pressing the mouse button, move the pointer around the screen and notice how the shape of the pointer changes to a *drawing pointer,* + , when it's over a blank part of the Schedule chart, to a *text pointer,* I , when it's over text, and to an *arrow pointer,* ↖ , when it touches the edge of a task box, milestone circle, or arrow.

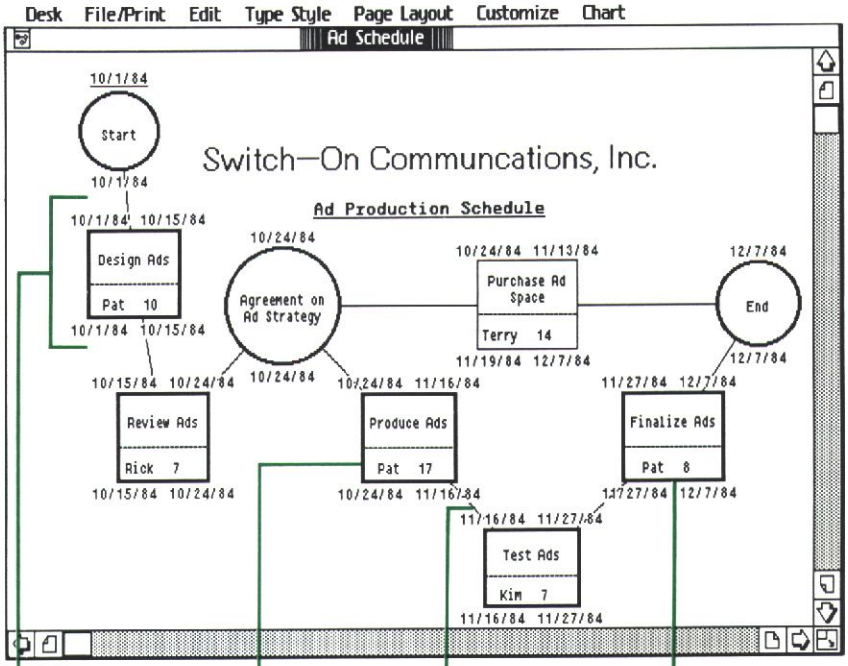
Practice with LisaProject

Imagine you work for a fictional company called Switch-On Communications, Inc. You've put together a preliminary schedule for an ad production project that now needs some editing. You need to add another task to the schedule, and, because the overall project has an aggressive deadline, you also need to shorten the duration of some tasks.

In the next several pages you will learn to:

- Display the earliest and latest possible dates that each task can be started and finished, and identify those tasks which are critical for completing the entire project in the shortest possible time.
- Draw and enter information into a new task box.
- Add the new task box to the schedule.
- Ask "What If?" by changing task durations and evaluating changes to the schedule.
- View the schedule as a Resource chart and a Task chart.

When you're finished, your schedule will look like the one on the next page. Compare it with the schedule now on your screen.



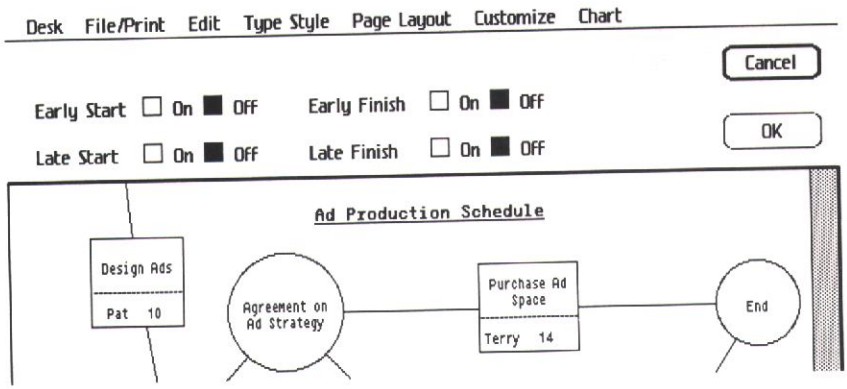
Displaying Dates on the Project Schedule Chart

The following steps explain how to display the earliest and latest possible dates that each task can be started and finished to complete the project in the shortest possible time. LisaProject automatically calculates the date based on the dependencies and durations of each task and a five-day work week. Once the dates are displayed, you'll be able to identify the entire project's earliest possible completion date and the project's critical tasks.

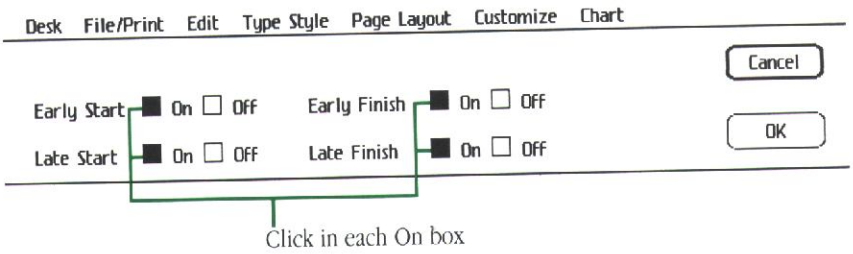
Note: In project scheduling, critical tasks are those tasks that must be completed on time if the entire project is to be finished at the earliest possible time. A task that is not critical has slack time — extra time in which the task can be completed without affecting the project's overall finish date. If you're unfamiliar with project scheduling, these concepts will become clearer as you work through this example.

To Display Dates on the Project Chart:

1 ▶ Open the **Customize** menu and choose **Display Dates** to bring up the Display Dates dialog box, as shown.

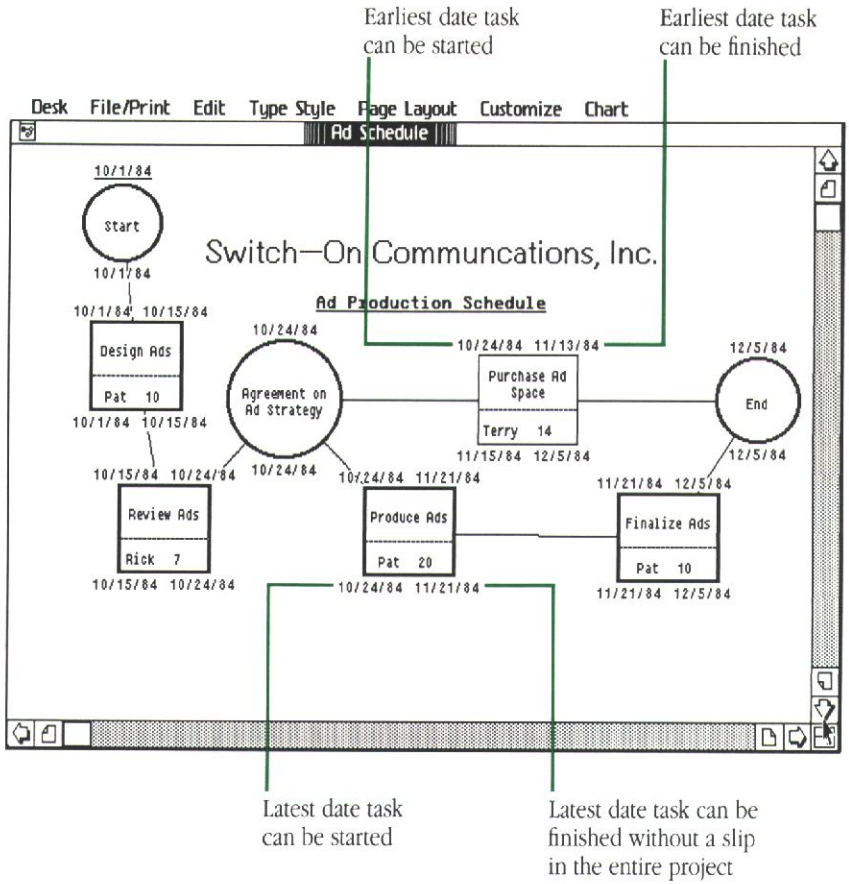


2 ▶ Use the mouse to click each of the On boxes, and then click **OK**, as shown.


Desk File/Print Edit Type Style Page Layout Customize Chart
Cancel
Early Start On Off
Early Finish On Off
Late Start On Off
Late Finish On Off
OK
Click in each On box

3 ▶ Take note of the dates now displayed on the Schedule chart. The Start circle shows that the whole project is to begin 10/1/84. The bolded boxes (those with darker, heavier lines) show tasks that are critical. A slip of one day on a critical task will slip the entire project one day beyond the earliest possible finish date of 12/5/84.

Notice that the task box labeled *Purchase Ad Space* is not bolded; it is not a critical task. This is because the ad space will be purchased during the same time the ads are being produced and finalized. Producing and finalizing the ads will take 30 days, while purchasing the ad space will take only 14 days, resulting in 16 days of slack time available for purchasing ad space.



Drawing a New Task Box and Entering Information

To Draw a New Task Box:

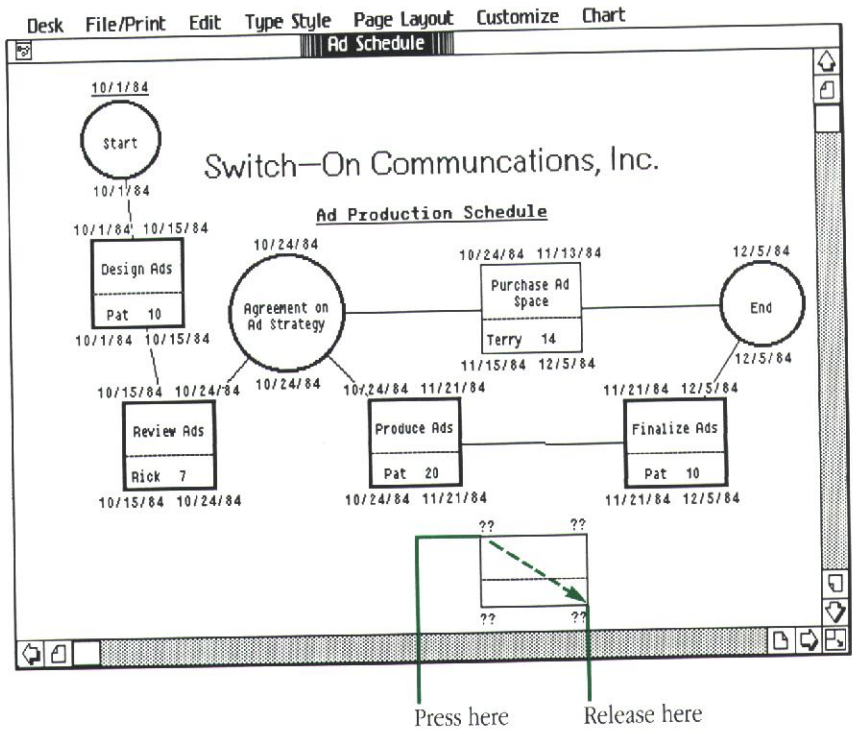
Your manager has suggested that you test the ads that are produced before you finalize them. Follow the steps below to draw a new task box and then enter the appropriate information into it.

1 ▶ Draw a new task box below and between the two task boxes labeled *Produce Ads* and *Finalize Ads,* as shown. Here's how:

a. Place the drawing pointer, +, where you want the upper-left corner of the new box.

b. Hold down the mouse button; as you move the drawing pointer down and to the right, a box appears.

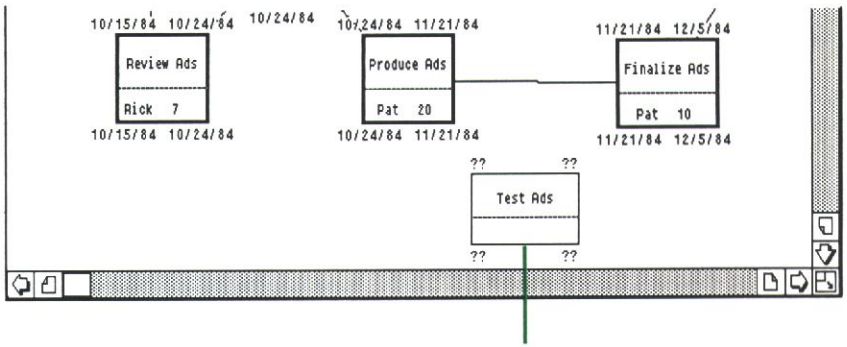
c. Release the button when the box is the size shown below. (Box not the size you want, or not in the right spot? Select the box by clicking on its edge with the arrow pointer, ↖. Then open the **Edit** menu, choose **Cut** and start over.)



2 ▸ Notice the blinking vertical line in the top half of the box. It's called an insertion point, and indicates that you are able to enter the task label. (Don't see an insertion point? Click once in the top half of the box to select an insertion point.)

3 ▸ Type the task label *Test Ads.* (Typing mistake? Use the Backspace key to correct it.) Press the Tab key.

Notice that pressing Tab moves the insertion point down to the resource area of the task box.

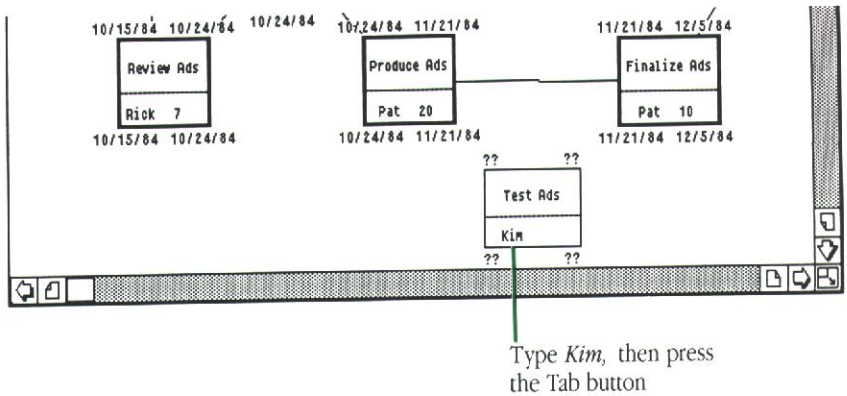


Type *Test Ads,* then press the Tab button

▸▸▸

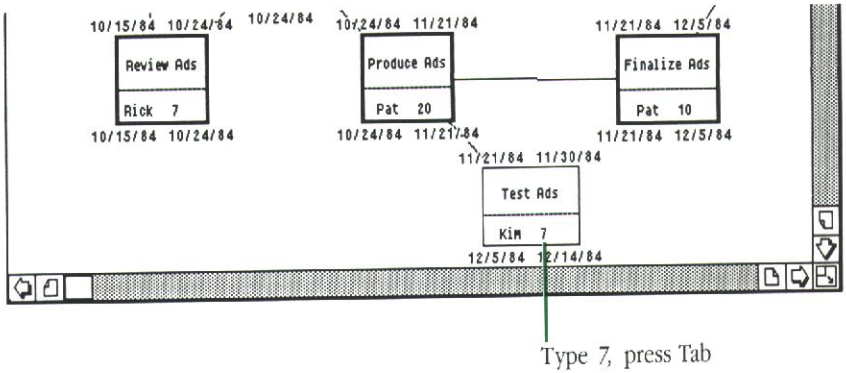
4 ▸ Now enter the name of the person who will test the ads: Type *Kim* and press the Tab key to move the insertion point over to the duration area of the task box.

Important: The resource and duration areas of the task box are separate. You cannot type in the name of the resource and then press the space bar to get to the duration area. To get to the duration area you must either press Tab after typing in the name of the resource or click with the pointer in the duration area (the lower right-hand area of the task box).



5 ▸ Make sure the insertion point is in the duration area of the task box, and enter the estimated duration of the task in days: Type 7 and press the Tab key.

Notice that since the new task box is not connected to any other tasks, its displayed dates are not yet adjusted to the rest of the schedule.



Adding a New Task Box to the Schedule

To Add a New Task Box to the Schedule:

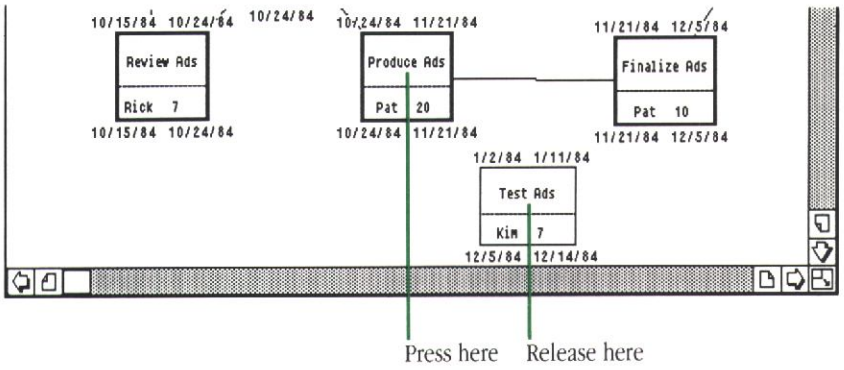
The ads must be produced before they can be tested, and tested before they can be made final. With these dependencies in mind, connect the new task to the project schedule as described in the steps below.

1 ▸ Draw a connecting line, or arrow, from the Produce Ads task box to the Test Ads task box, as shown. Here's how:

a. Place the pointer in the middle of the Produce Ads task box.

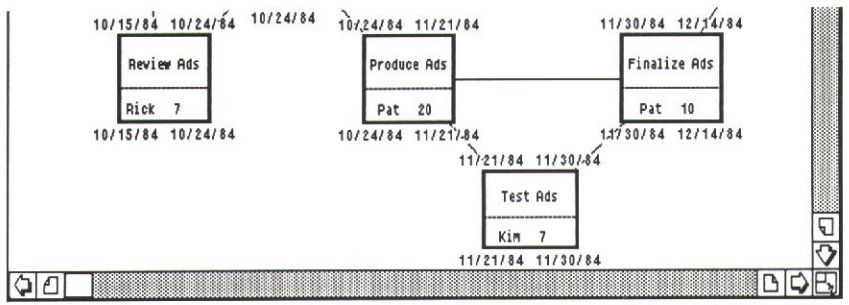
b. Hold down the mouse button and move the pointer to the middle of the Test Ads task box; then release.

Notice the new connecting arrow and the change in displayed dates.



2 ▸ Follow the same procedure to draw an arrow from the Test Ads task box to the Finalize Ads task box, as shown.

Notice how the displayed dates are recalculated for the Finalize Ads task box, and that now the scheduled end date for the project is 12/14/84.

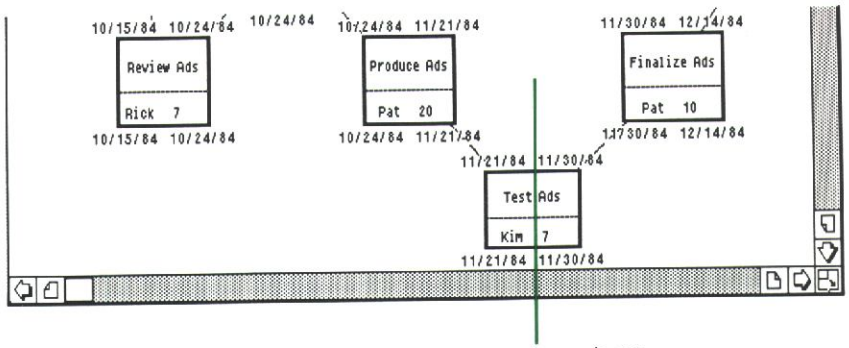


▸▸▸

3 ▸ Now that you've added the Test Ads task box to the schedule, you can cut the arrow between the Produce Ads task box and the Finalize Ads task box. Here's how:

a. Select the connecting arrow by clicking on it with the tip of the arrow pointer, ↖. (Arrow between the tasks not highlighted? Try again.)

b. Open the **Edit** menu and choose **Cut**. The connecting arrow disappears.



Arrow is cut

"What If?": Changing Task Durations and Evaluating Changes in the Schedule

Besides suggesting that you test your ads before they are finalized, your manager has specified that the entire project must be finished by December 7. But the project is now scheduled to end on 12/14/84.

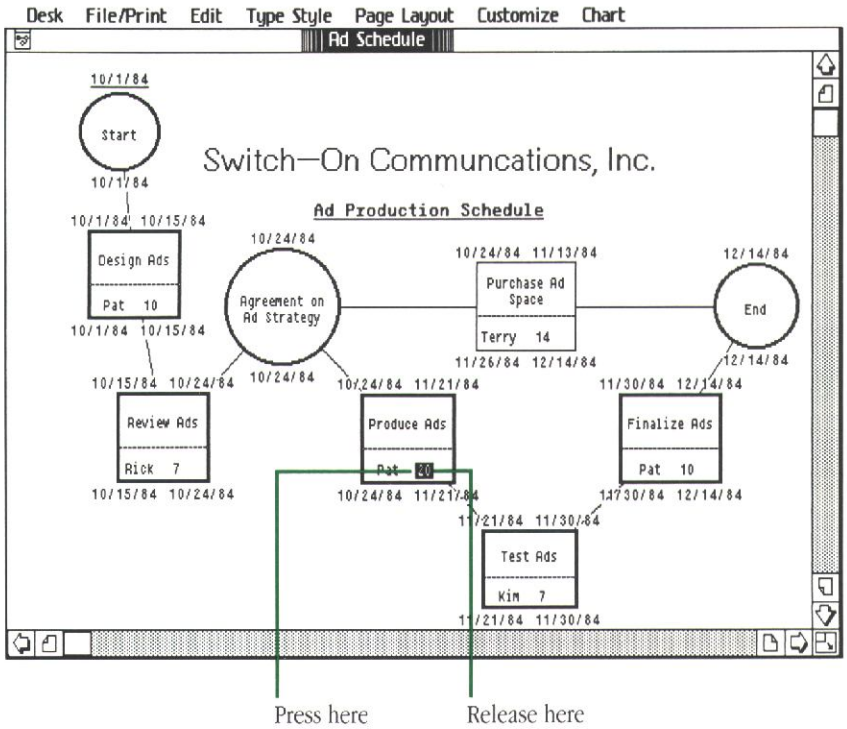
You've talked to the project team members, and you think the time needed to produce and finalize the ads can be reduced. Follow the steps below to see what happens to your schedule when you replace some of the current task durations with your new estimates.

To Make and Evaluate Schedule Changes:

1 ▸ Select (highlight) the number *20* in the Produce Ads task box, as shown. Here's how:

a. Place the text pointer, I, immediately before the *2*.

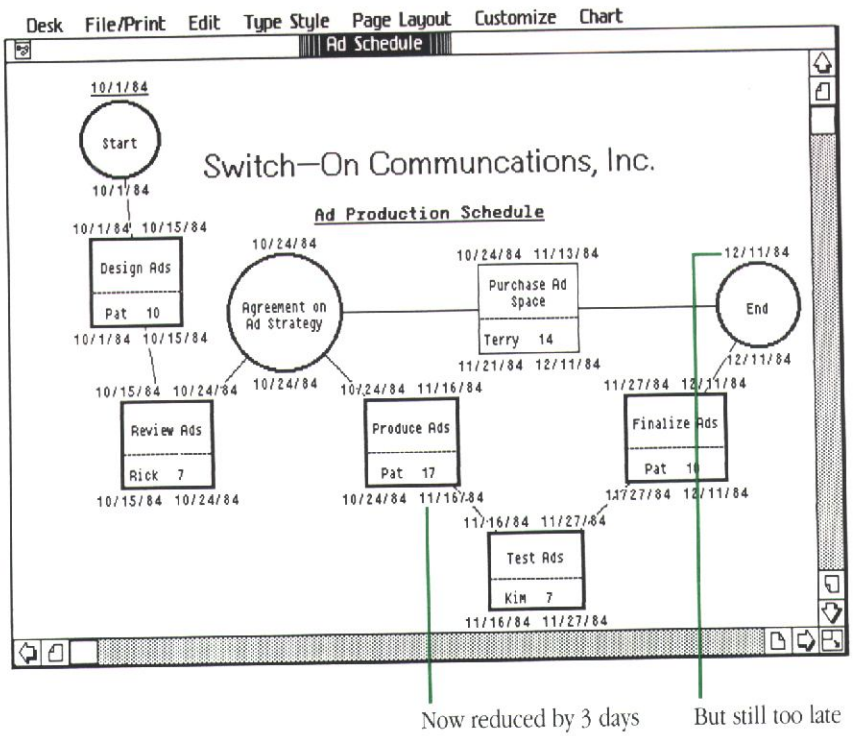
b. Hold down the mouse button and move the pointer through to the other side of the *0*; then release. (The number *20* not highlighted? Try again. Make sure you start with the text pointer just to the left of the *2*.)



▸▸▸

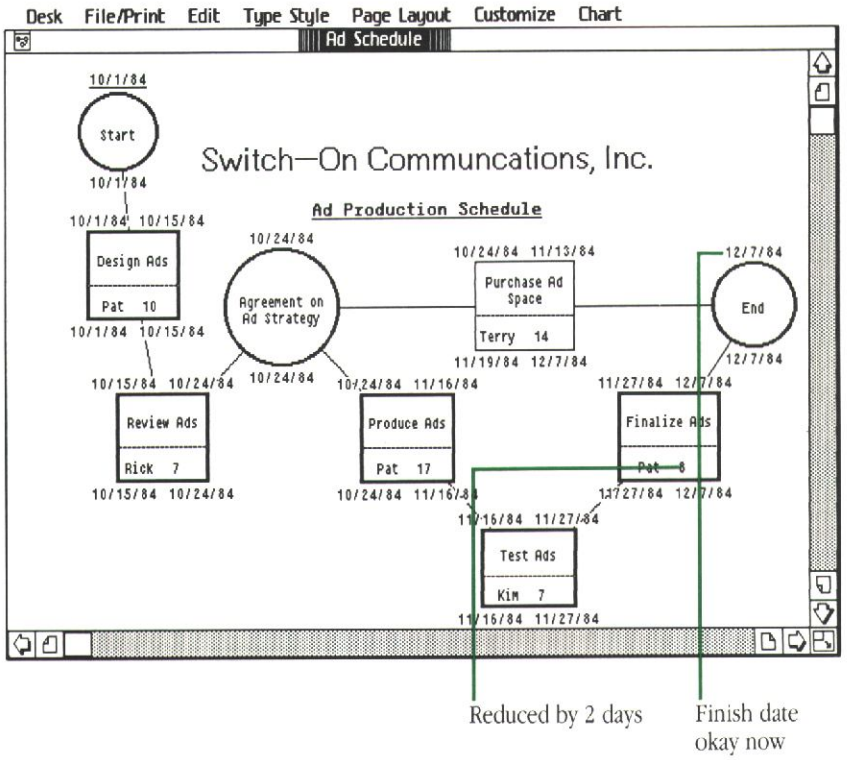
2 ▸ Type *17* and press Tab.

Notice that the displayed dates are recalculated after you press Tab and that the project's new scheduled end date is 12/11/84, still not at your goal.



3 ▸ Follow the same procedure in steps 1 and 2 to reduce the duration in the Finalize Ads task box from *10* to *8,* as shown. (Select the number *10,* type *8,* and press Tab.)

Notice that the displayed dates are recalculated after you press Tab and that your project is now scheduled to be completed on 12/7/84 — finished by the date your manager specified.



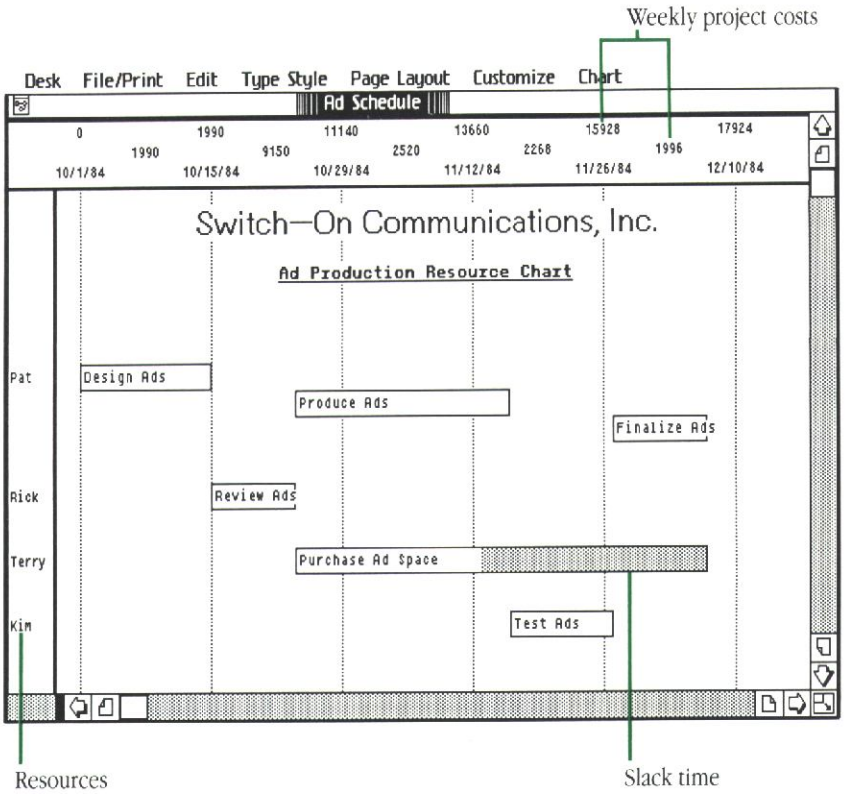
Viewing the Schedule as a Resource Chart and as a Task Chart

To View the Alternate Charts:

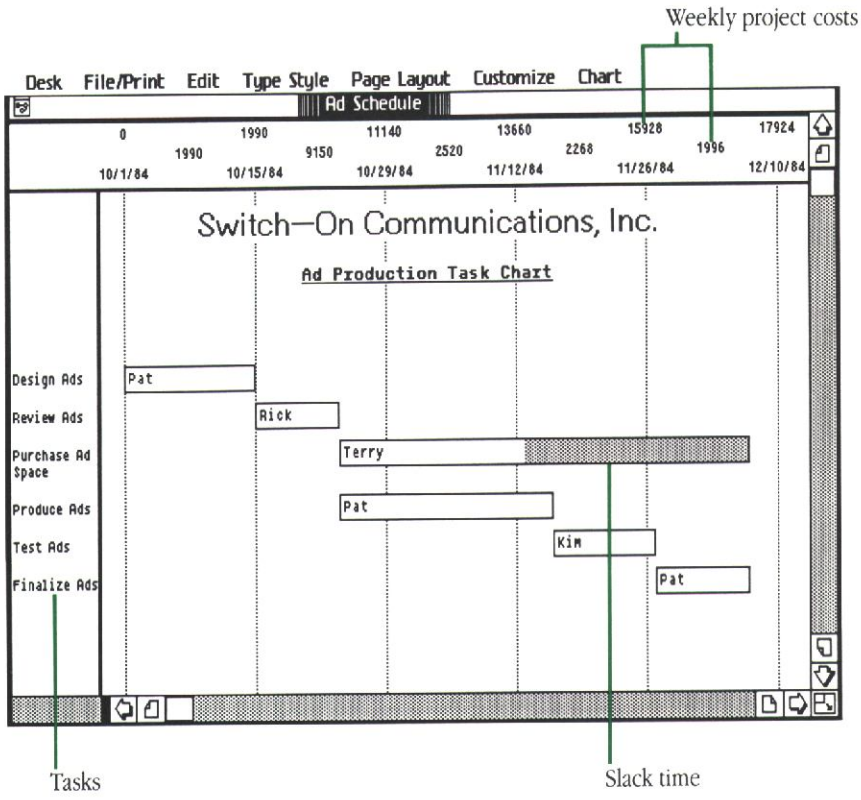
LisaProject can display your project plans in several different ways. Until now, your project has been displayed as a Schedule chart. Take a look at your project plotted by resource, and then by task, as described below.

1 ▶ Open the **Chart** menu and choose **Resource** to see your project schedule laid out by resource. The Resource chart lets you see the tasks performed by each resource and to see how busy each resource will be over the life of the project.

Notice the gray area of the Purchase Ad Space task bar — the gray area shows the slack time for that task. If a task bar does not show slack time, that task is critical.



2 ▶ Open the **Chart** menu and choose **Task** to see your project schedule laid out by task. The Task chart lets you see the overall order in which the tasks will be performed.

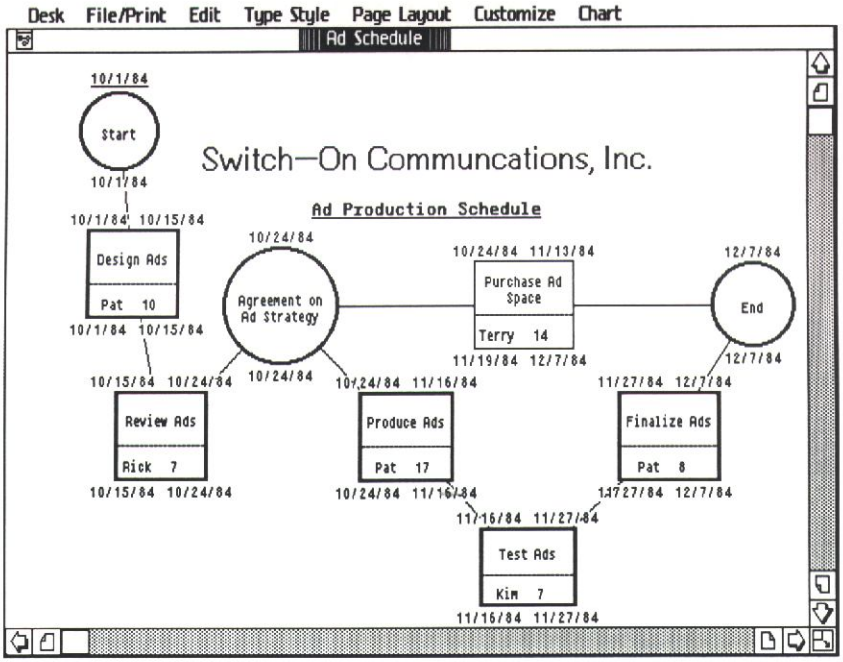


▶▶▶

3 ▸ Open the **Chart** menu and choose **Schedule** to get back to your original Schedule chart.

You've examined your overall project in various ways and you're satisfied with the plan. Your schedule is now complete.

Note: The Schedule chart is where you actually enter and make changes to your project's schedule. Then you can automatically generate LisaProject Resource and Task charts, to examine and track your project from different vantage points.



Printing Your Document (Optional)

You can now print the LisaProject document you've been working on if you want to. For guidelines on printing, refer to Printing Your Document, in Chapter 3, Using the Lisa, in the *Lisa Office System* manual.

If you don't want to print your list now, or if you don't have a printer, go on to the next section, Putting Your Document Away.

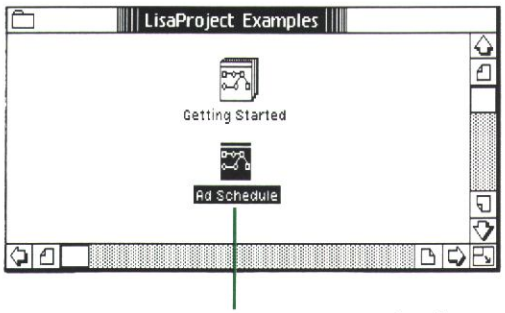
Putting Your Document Away

To Put Your Document Away:

Now that you've finished working on your LisaProject document, follow the steps below to put it away.

1 ▸ Open the **File/Print** menu and choose **Save & Put Away**. (Is the Save & Put Away menu item dim? Click somewhere in the document window to activate it.)

Notice how the window zooms down to a document icon back in its filing home in the LisaProject Examples folder.



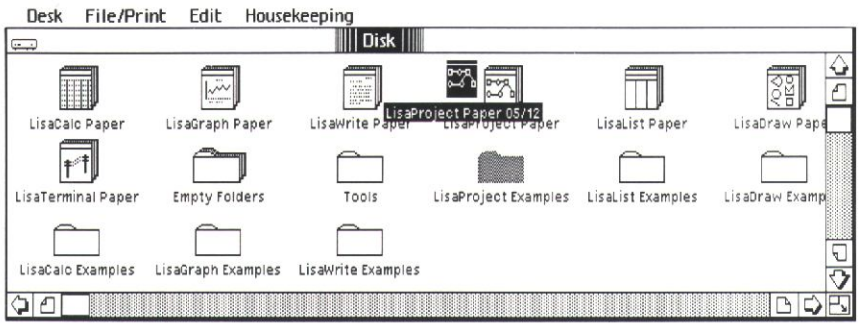
Document is saved and put away

Starting from Scratch

To Start a New Schedule:

To start a new schedule, you need to get a piece of LisaProject stationery, as described below. Blank LisaProject stationery is in a pad called LisaProject Paper, in the disk window.

1 ▸ Tear off a sheet from the LisaProject Paper pad at the top of the disk window. (Select the pad icon; open the **File/Print** menu and choose **Tear Off Stationery**.)



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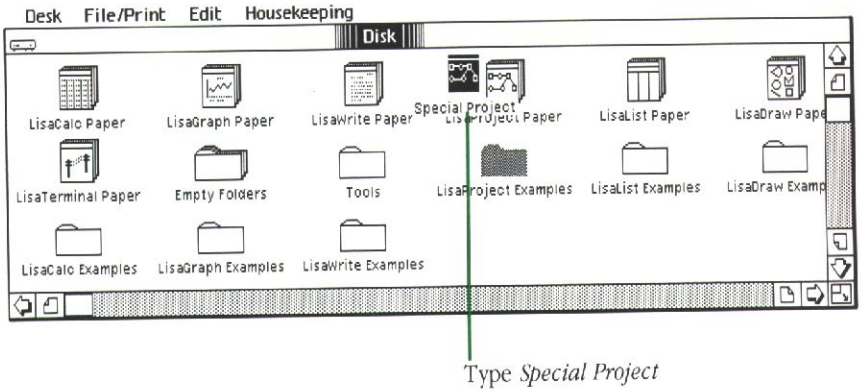
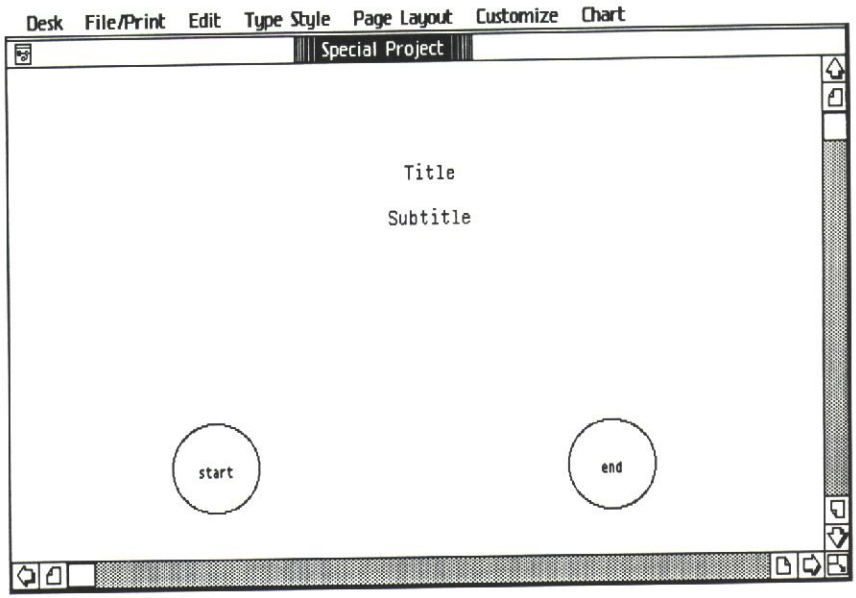
2 ▸ Don't worry right now about moving the untitled document out of the way. Change the name of the untitled document to *Special Project.* (Make sure the icon is selected; then type.)



3 ▸ Open the piece of LisaProject paper you named *Special Project* as you would any document. (Open the **File/Print** menu and choose **Open "Special Project."**)

4 ▸ Once the blank piece of LisaProject paper appears, you're ready to begin a new special project. Some things you should do when creating a new project are described in the next few pages.



Creating a New Project Schedule

Any time you begin a new project schedule you need to:

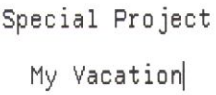
- Give the Schedule chart your own title.
- Move the start and end circles apart to give yourself more room to draw task boxes.
- Draw and enter information into the task boxes that all together make up your project.
- Draw connecting arrows between dependent tasks, from left to right.
- Display the project dates and set a scheduled start date for the project.

This work flow will be illustrated with a very brief example. The example concerns a particularly special project — your vacation.

To Give the Schedule Chart the Title *Special Project* and the Subtitle *My Vacation:*

1 ▸ Select the word *Title* by pressing and holding with the text pointer just before the *T,* and then moving the pointer across and releasing after the *e,* as shown. (Didn't get it? Just try again.)

2 ▸ Type *Special Project.* Now follow the same procedure to replace the word *Subtitle* with *My Vacation,* as shown. (Typing mistake? Use the Backspace key to correct it.)



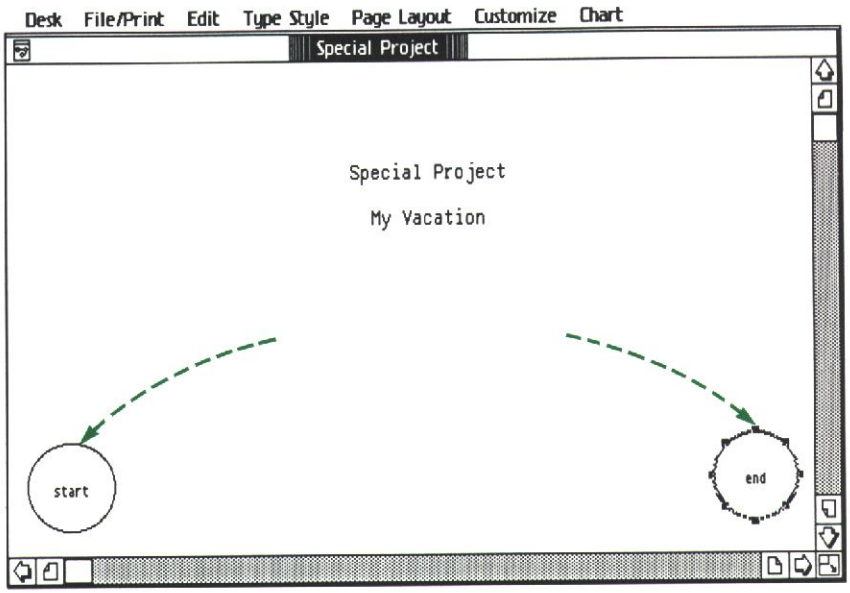
To Move the Start and End Circles Apart:

1 ▸ Move the tip of the arrow pointer to the edge of the start circle. Press and hold down the mouse button, move the circle to the left, and then release. (Circle didn't move? Make sure you press with the tip of the arrow pointer on the circle's edge.)

▸▸▸

2 ▸ Follow the same procedure to move the end circle to the right, as shown. (The small black squares around the circle are called *handles;* they show that the circle is selected.)

Note: You also can use this procedure to move task boxes after you have created them.



To Draw Task Boxes and Enter Information into Them:

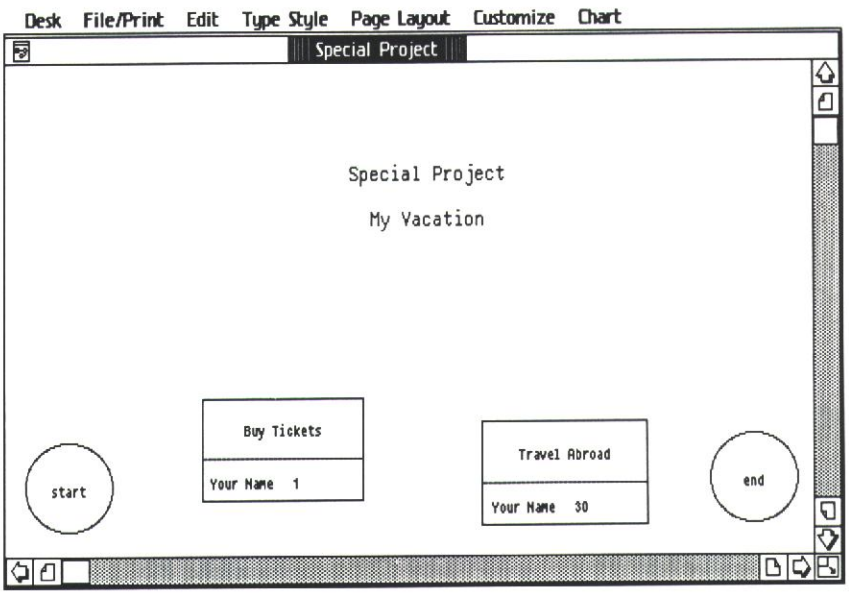
1 ▸ Draw a task box next to the start circle, and type in the following information:

Buy Tickets	*Tab*
Your Name	*Tab*
1	*Tab*

2 ▶ Draw another task box to the right of the one you just drew, and enter this information:

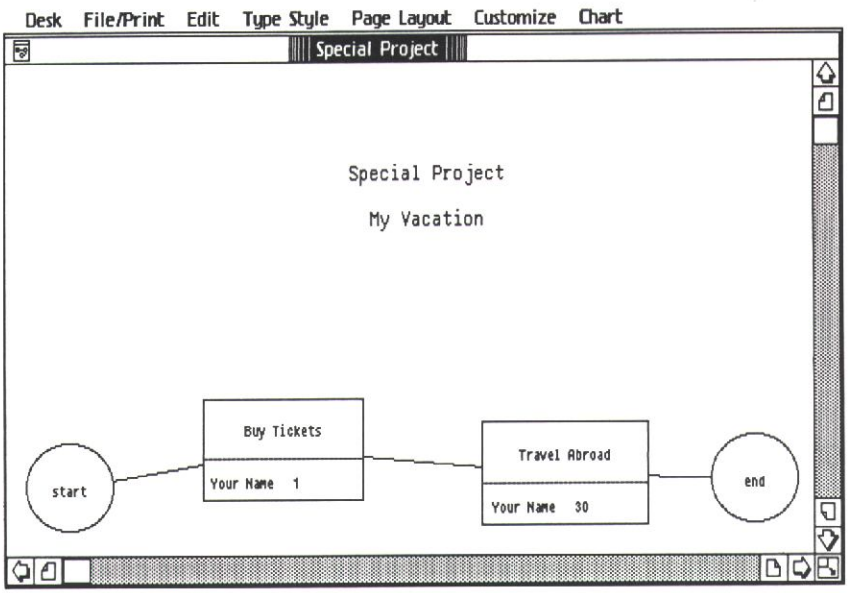
Travel Abroad *Tab*
Your Name *Tab*
30 *Tab*

(The *30* in this case stands for 30 working days.)



To Draw the Connecting Arrows for Your Project:

1 ▶ Start in the middle of the start circle and use the mouse to draw a connecting arrow to the Buy Tickets task box. Draw the remaining arrows as shown, remembering to draw each arrow from left to right.

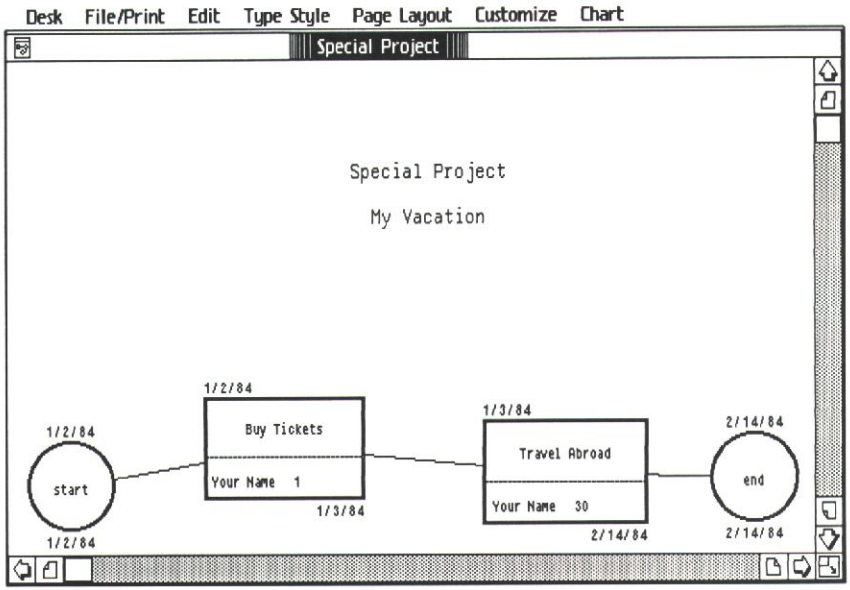


To Display the Project Dates for Your Vacation:

1 ▸ Open the **Customize** menu and choose **Display Dates**. When you see the Display Dates dialog box, click the On box for just the Early Start and Late Finish dates, and then click OK so the dates displayed look like those shown below.

Notice that your vacation's start date is shown as 1/3/84, the first Monday of the calendar range set for this piece of LisaProject stationery.

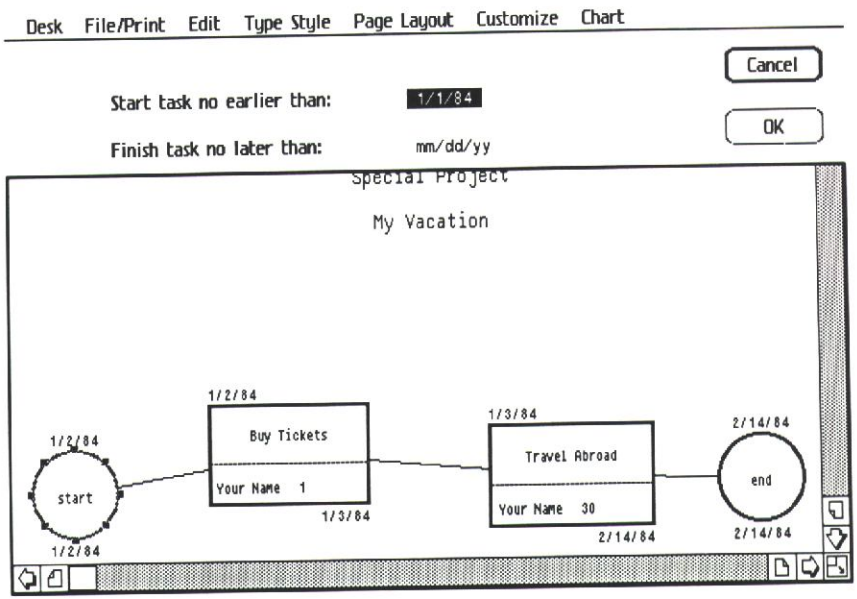
Note: You can reset the year of the LisaProject calendar range and the dates on which holidays occur by choosing **Calendar** from the **Customize** menu.



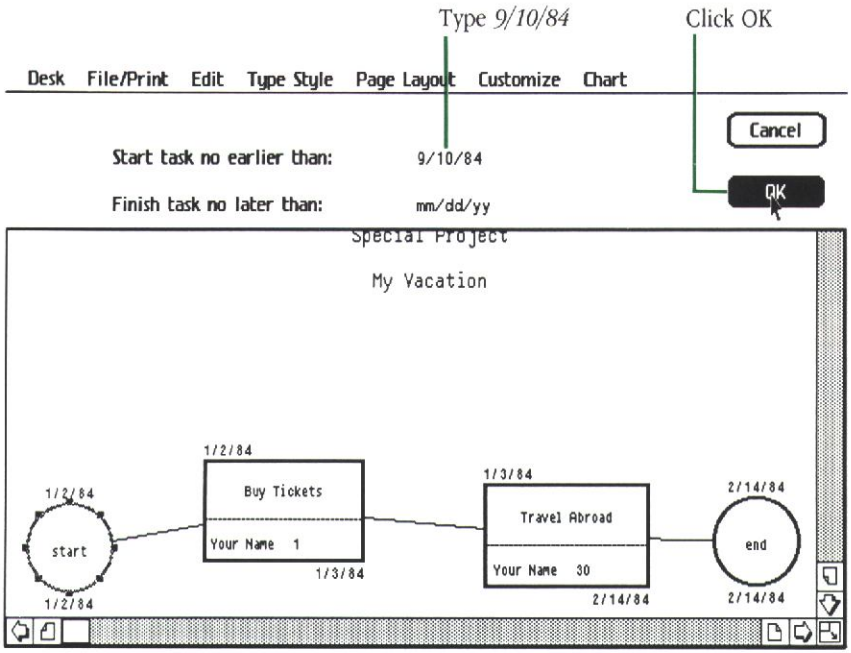
To Set Your Own Scheduled Start Date:

1 ▶ Select the start circle by clicking on its edge with the tip of the arrow pointer. (The small black squares, called handles, show that the circle is selected.)

2 ▶ Open the **Customize** menu and choose **Set Scheduled Dates** to bring up the dialog box shown below.



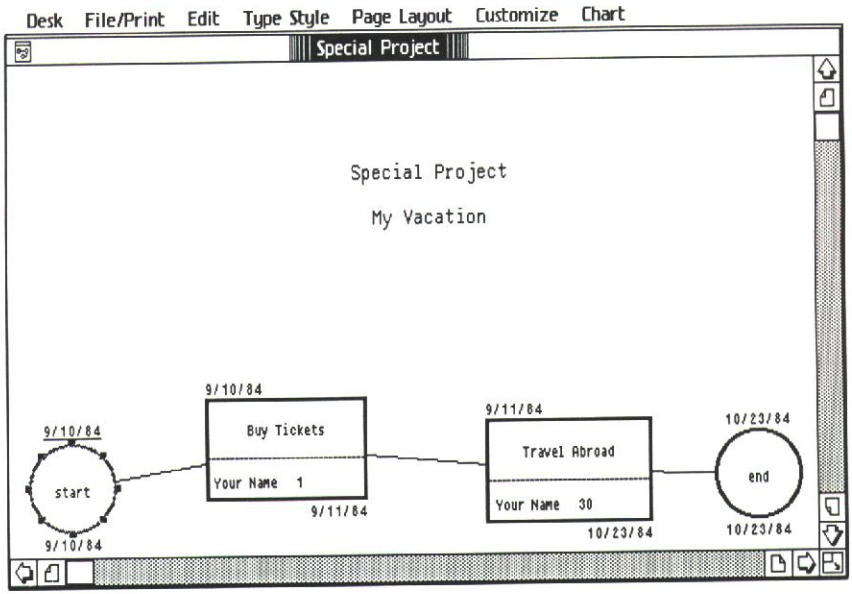
3 ▸ The start date in the dialog box, *1/1/84,* is already selected (highlighted), so just type *9/10/84* . (Typing mistake? Use the Backspace key to correct it.) When the date is correct, click OK to close the dialog box and return to the schedule.



▸▸▸

4 ▶ Notice the recalculated dates and the new date now above the start circle, 9/10/84. The underlining of the date indicates that you've set a scheduled date. Dates not underlined are set by default (that is, automatically) or as a result of schedule calculations.

Note: You can also set scheduled dates for other tasks and milestones.



Your Special Project schedule is complete. To see it without the start circle selected, click on a blank part of the Schedule chart. Now if you'd like to experiment with LisaProject, do so — try different things. Press and move across the menu bar and look at what's in all your menus. If you want specific information on something, look in LisaProject Reference, Chapter 3, or check the Index.

Finishing Up

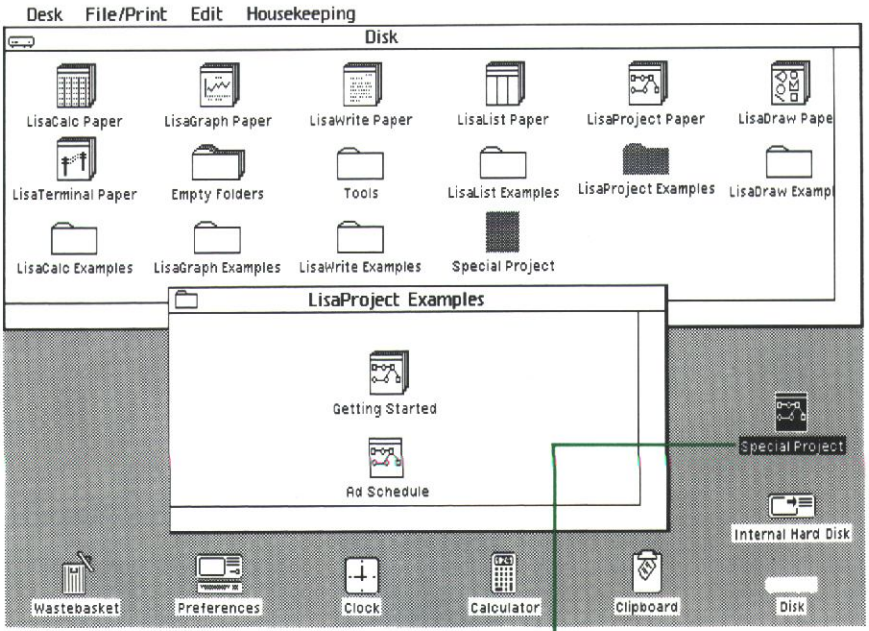
It is a good idea to save all your documents and clear off your Lisa's desktop at least once a day. The steps below illustrate one of the many ways you can manage things on the Lisa desktop.

Note: When you are connecting, disconnecting, moving, or servicing equipment, you must turn off the power. Normally, however, turn off your Lisa only at the end of each week. Always leave your external disk drive, if you have one, turned on.

To Save and Put Away Your Document:

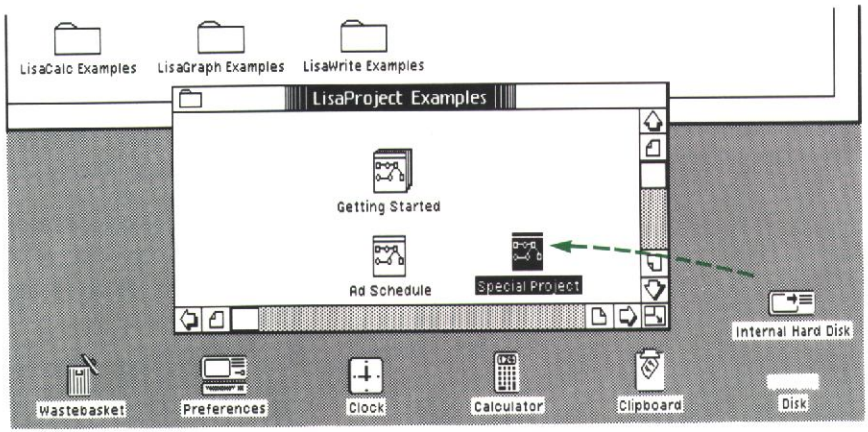
1 ▸ Open the **File/Print** menu and choose **Set Aside** "**Special Project.**" Notice how the document is set aside as an icon on the desktop.

Note: When you're working with several documents at the same time, it's often convenient to keep some of them set aside on the desktop, where you can get to them easily.



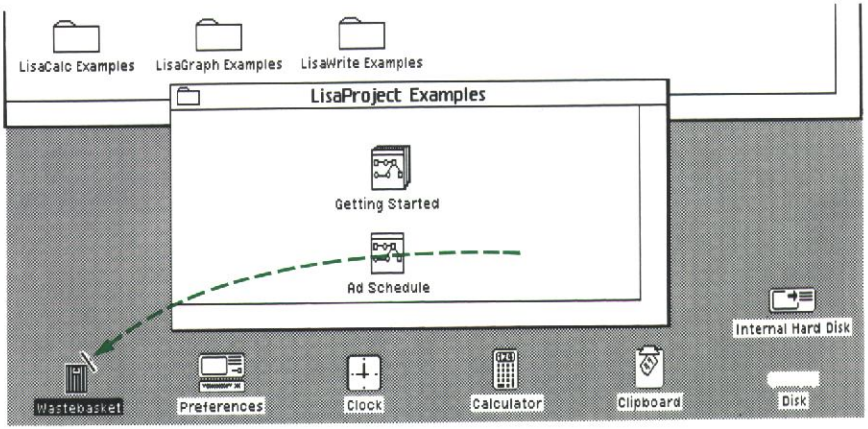
Special Project is set aside

2 ▶ If you want to move the Special Project document icon to a clear area in the LisaProject Examples folder, as shown, press and hold down the mouse button with the pointer on the icon. Move the icon, and release the mouse button when the icon is where you want it.)

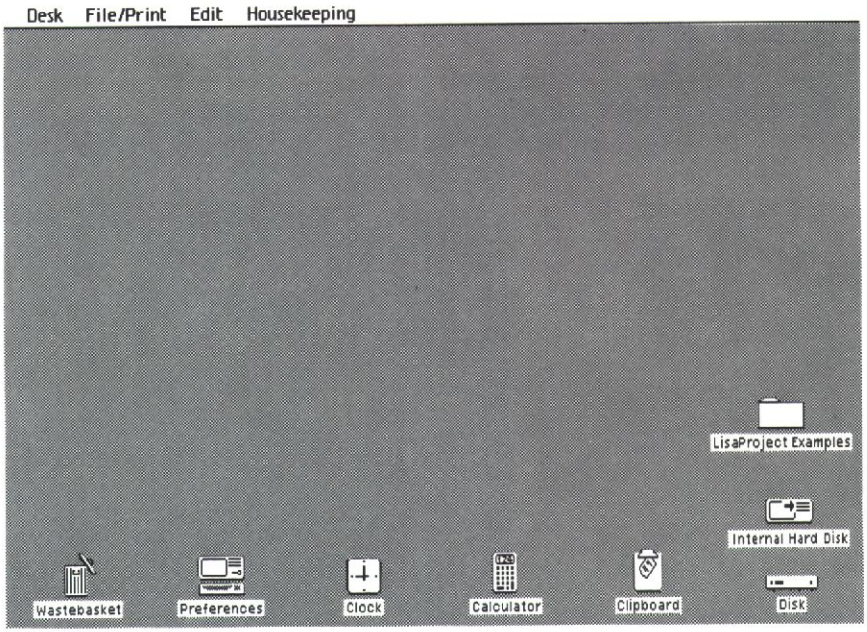


3 ▶ If you want to throw away the Special Project document, move it to the Wastebasket icon. When the document icon is on the Wastebasket and the Wastebasket icon highlights, release the mouse button and wait for the document to be deposited.

Note: You can always get back the last thing you've thrown away by opening the Wastebasket icon and moving the deposited document back out.



4 ▸ Now set aside both the LisaProject Examples folder and the disk window; open the **File/Print** menu and choose **Set Aside Everything**. Notice that both the Folder and Disk icons are now set aside on the desktop.



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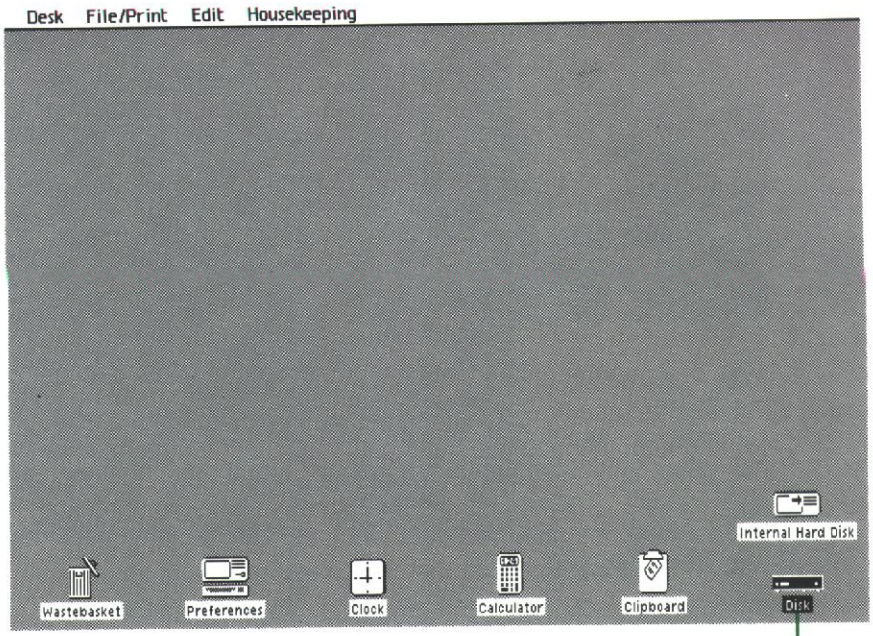
5 ▸ You can put the LisaProject Examples folder back in its filing home in the disk even when the disk window is closed. To do so, select the LisaProject Examples folder, open the **File/Print** menu, and choose **Save & Put Away "LisaProject Examples."**

Note: If you want to deselect a selected icon, click once on a blank part of the screen.



Folder is saved and put away

6 ▸ When you are ready to work on something else, just open the disk window again by selecting the icon. When you want to turn off the Lisa's power — for example, over the weekend — press the lit on-off button.

When you turn on the Lisa again, all your documents will reappear just as you left them when you turned off the Lisa, including documents you may have left open on the desktop. Always leave the external disk drive, if you have one, turned on.

Using LisaProject

You now have the basic skills needed to produce your own LisaProject documents. Because the concepts for using each Lisa tool are the same, you also have some of the skills needed to use other Lisa tools — LisaCalc, LisaDraw, LisaGraph, LisaList, and LisaWrite.

To learn more about LisaProject, go on to Chapter 2, Using LisaProject. If you have questions about specific LisaProject features or menus, refer to Chapter 3, LisaProject Reference.

For answers to questions about the Lisa desktop, on which LisaProject and other Lisa tools work, see the *Lisa Office System* manual.

Chapter 2

Using LisaProject

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LisaProject Essentials

The information on the following pages outlines the basic concepts and procedures that you need to be familiar with before using LisaProject. It describes the LisaProject window and helps you with planning a project chart. Read this information before creating a chart using the procedures described in the rest of the chapter.

Before You Begin

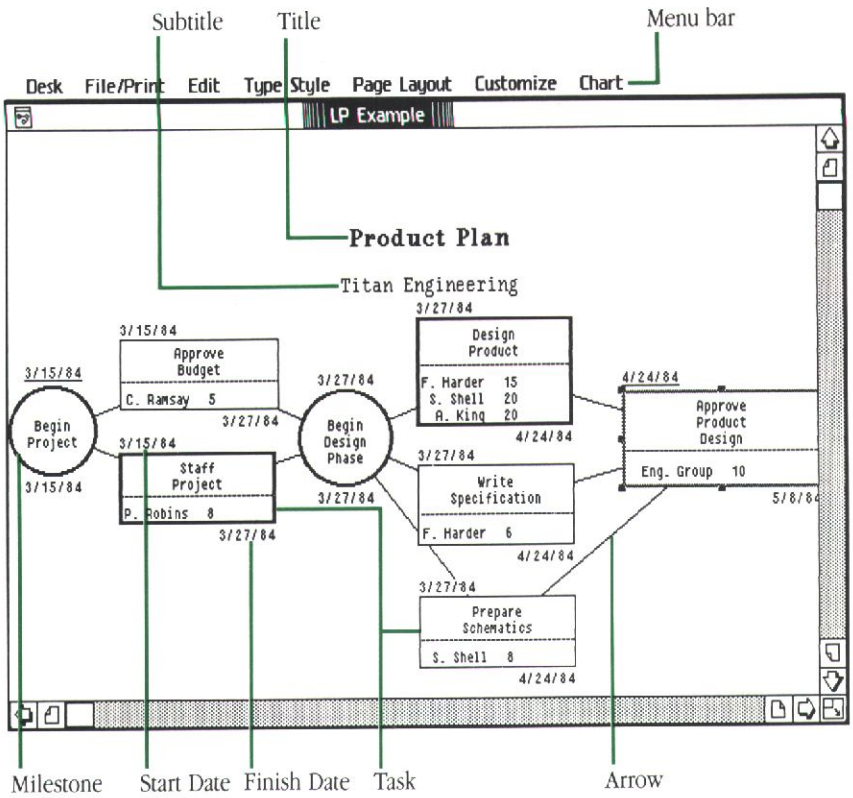
Before you begin this chapter, be sure you've gone through Chapter 1, Learning LisaProject, which gives you practice working with a LisaProject document. You should now feel comfortable with special terms, such as *selecting* and *choosing,* used in reference to the Lisa.

Procedures you should understand before beginning this chapter include the following:

- How to move the pointer around the screen using the mouse.
- How to open and save LisaProject documents.
- How to change the size of a window and how to move a window around on the desktop.
- How to scroll the contents of the window to see different parts of the document.
- How to open menus and choose menu items.
- How to select objects on the screen and move them around.
- How to change or add information to a LisaProject document.
- How to display LisaProject information in different charts.

If you need help, or if you want to refresh your memory, now is a good time to review LisaGuide once more. For instructions on using the LisaGuide micro diskette, see Chapter 1, in the *Lisa Office System* manual; for more general information, refer to Chapter 3, Using the Lisa, in the *Lisa Office System* manual.

The LisaProject Schedule chart is shown below.



The **Menu Bar** shows the names of the LisaProject menus that you can use to perform specific operations.

Title and Subtitle for a project chart. Space is reserved on the LisaProject paper for the title and subtitle to be entered.

Tasks are shown as boxes on a LisaProject Schedule chart. The box is labeled with the task name, the resource(s) required to complete the task, and the amount of time in days needed to complete the task. Tasks are drawn on the chart in the order they must be completed beginning on the left. Critical tasks are displayed with a bold outline.

Milestones in a project are represented as circles on a LisaProject Schedule chart. Milestones are labeled with a name but do not have resources or times associated with them. You can use milestones to isolate project events as well as to clarify complicated dependency relationships among several tasks.

Arrows or connecting lines show dependencies between tasks and milestones. Arrows show the sequence in which tasks must be performed and show which tasks cannot be started until others have finished.

Start and Finish Dates are automatically calculated by LisaProject for each project task and milestone. Dates you schedule are underlined. Dates are not automatically displayed when you create a chart. You must open the **Customize** menu and choose **Display Dates**.

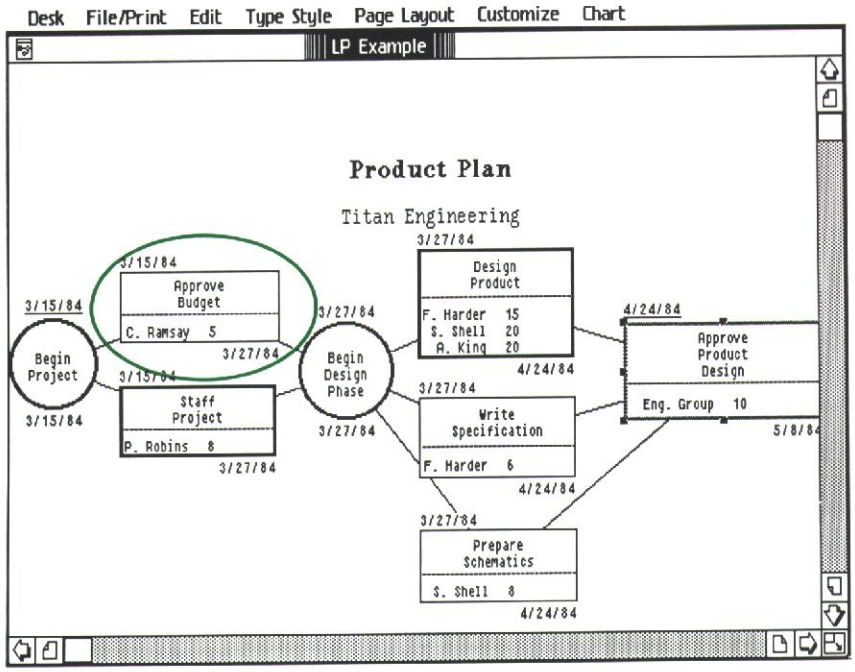
Viewing Alternate Charts

You can view your project in three kinds of charts. They are:

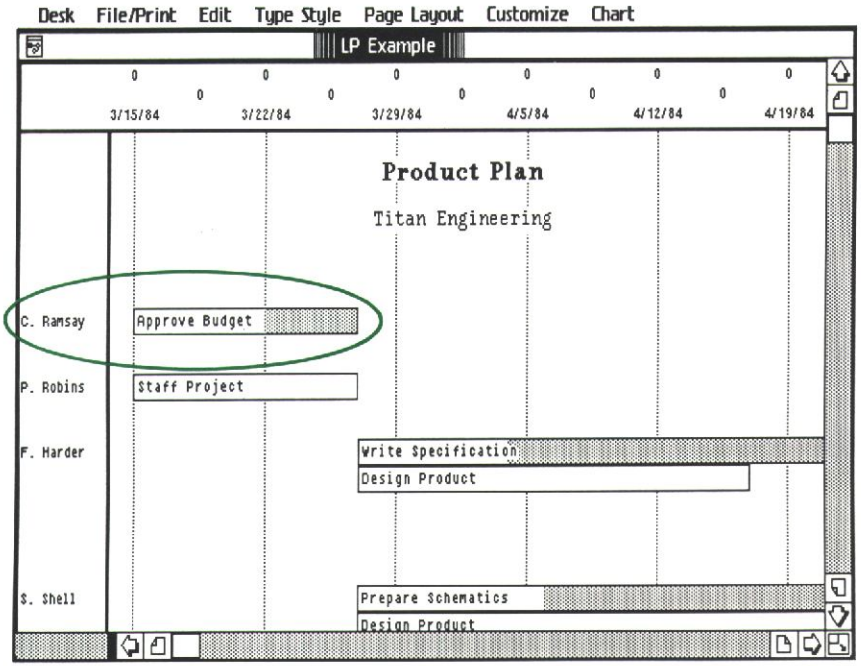
- Schedule chart.
- Resource chart.
- Task chart.

When you create a Schedule chart, LisaProject automatically creates a Resource chart and a Task chart for you. Any of the charts can be displayed at any time.

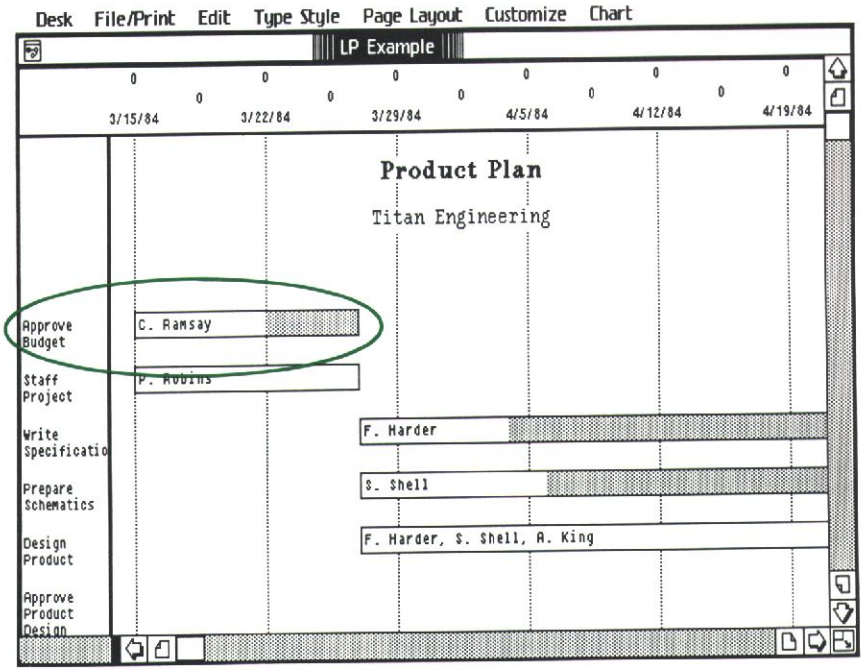
Each kind of chart gives you a different perspective on a project. Schedule charts graphically show the interdependence of project tasks.



Resource charts view the project from the perspective of resource utilization and can help you identify available resources.



Task charts can be used to be sure the project is keeping to the schedule.

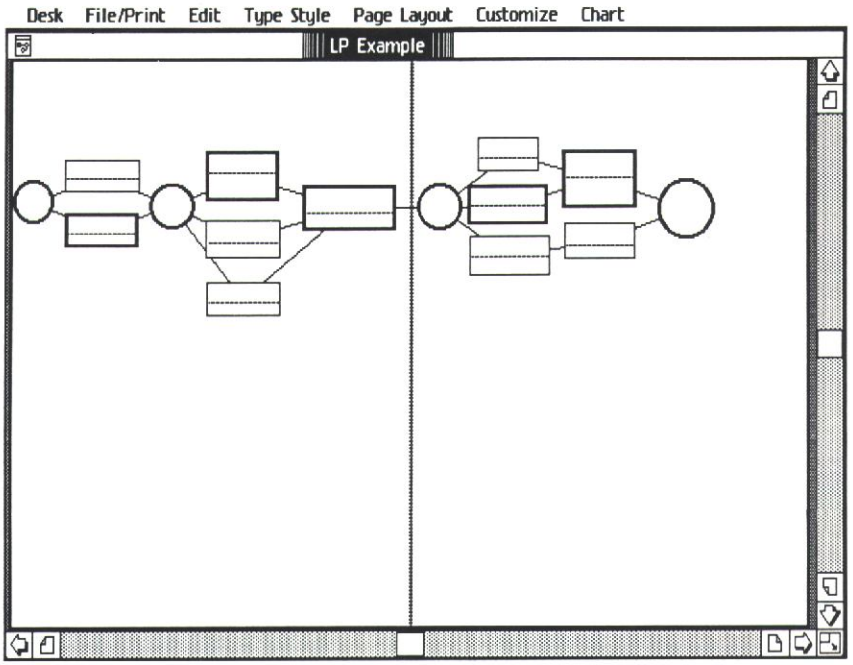


Planning a Chart

You do not have to plan a project or project chart before you begin using LisaProject. Because you can revise a chart at any time, and LisaProject will instantly recalculate the schedule and costs on the basis of those changes, you do not need all the facts before you begin. Instead, you can use LisaProject to help you plan.

You always create a Schedule chart with LisaProject; however you do not need to create the entire chart at one time. Sometimes you'll begin by simply identifying the project tasks. You can label all tasks as you create the chart, or you can enter only the information you know and revise the chart as more information becomes available.

Because you create a graphic representation of a project, the page layout is important. For this reason, you may want to create multiple page charts in preview mode, reduced to fit all pages on one screen. This allows you to see the chart layout so that you can arrange task boxes in relation to the chart as a whole. You add pages to the chart as you create it, so there's no need to know how large the chart will be when you begin.



Schedule Chart Shown in Preview, Reduced to Fit

Selecting Parts of a Chart

When you want to perform any operation on a specific part of a LisaProject chart, there are always two steps involved. These are:

1. Select the appropriate part of the chart.

2. Perform an operation on that part.

For example, to move a task or milestone, you select it and then drag it to another part of the chart; to delete a task label you select it and then cut it from the box.

The part of the chart you select is called the selection. The current selection is indicated by some kind of highlighting. Selected tasks and milestones have handles on the outline of the box and circle. Selected text appears with a black background. Selecting any other part of the chart cancels the current selection.

For complete information on basic Lisa selection procedures, refer to Chapter 3 in the *Lisa Office System* manual.

To Select Parts of a Chart:

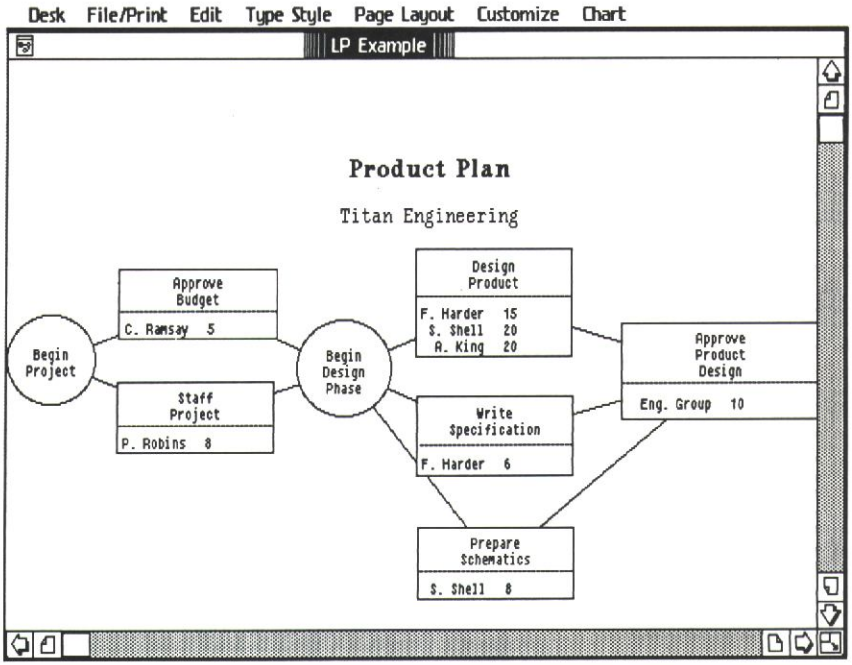
To Select a Task or Milestone:	Click once on the outline of the box or circle.
To Select a Connecting Line (Arrow):	Click once on any part of the connecting line (arrow).
To Select One Word:	Double-click on the word.
To Select One or More Characters:	Press and drag through the characters you want to select.
To Select All Text on a Chart:	Open the **Edit** menu and choose **Select All of Document**.
Select Nothing, or to Deselect Something:	Click once anywhere in an empty part of the window.

Creating a Chart

When you create a LisaProject chart, you are creating a Schedule chart. This chart is a network of interdependent tasks and milestones. Project tasks are represented as boxes; project milestones are represented as circles. You draw, label, and connect all tasks and milestones.

Once you have drawn and labeled the tasks and milestones, you can set calendar dates for the entire project and scheduled dates for individual tasks and milestones.

Based on the information you have entered on the Schedule chart, LisaProject calculates early and late start and finish dates for each task and milestone.



Opening a New Chart

You create LisaProject charts on LisaProject paper. Each time you begin a new chart, you open the disk and tear off a piece of LisaProject stationery.

To Start a New Chart:

1 ▸ Select the disk by clicking once on its icon.

2 ▸ Open the **File/Print** menu and choose **Open "Disk"**.

3 ▸ Select the LisaProject paper by clicking once on its icon.

4 ▸ Open the **File/Print** menu and choose **Tear Off Stationery**.

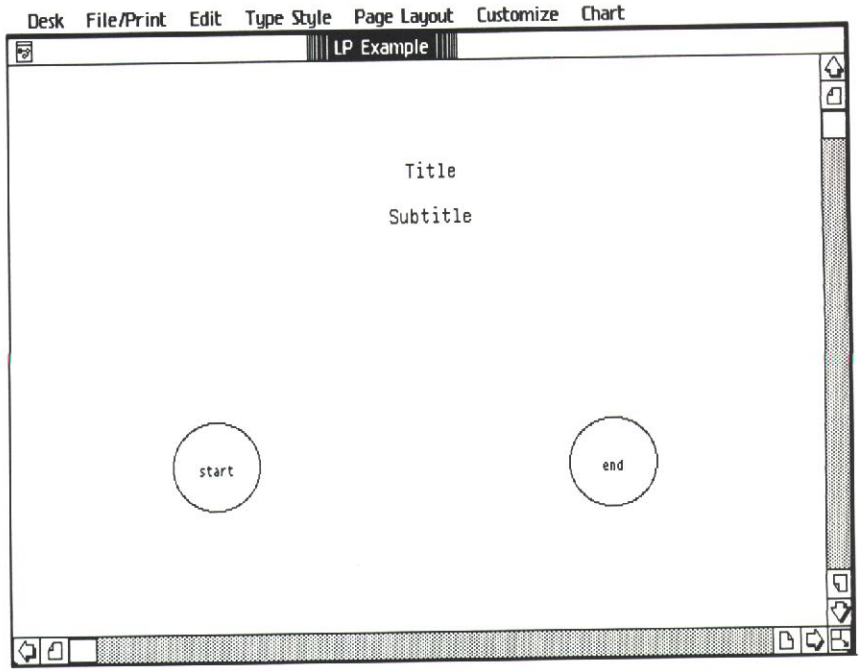
5 ▸ Type a name for the new chart (the name can be any length).

6 ▸ Open the **File/Print** menu and choose **Open "Your Chart"**.

For a shortcut to starting a new chart, see Shortcuts and Alternatives later in this chapter.

Adding a Chart Title and Subtitle

Each piece of LisaProject stationery has an area reserved for a chart name. This area is labeled *Title* and *Subtitle.* You can add a specific title for any chart by typing over these words with an appropriate title for your chart.



LisaProject Stationery

Both the title and subtitle may contain several words, for example, *The Eagle Project.* However, each is limited to a single line and no more than 50 characters. Spaces count as characters.

Each chart and table has its own title and subtitle. Adding a title or subtitle to a Schedule chart does not automatically add it to a Resource chart or to a Task chart.

To Add a Chart Title and Subtitle:

1 ▸ Select the *Title* area.

2 ▸ Type the name of the chart. (Typing mistake? Use the Backspace key to correct it.)

3 ▸ Press the Tab key to select the "Subtitle" area.

4 ▸ Type the subtitle.

Drawing and Labeling Tasks and Milestones

Each project task is represented on a LisaProject Schedule chart as a box; milestones are represented as circles. To enter a task or milestone you:

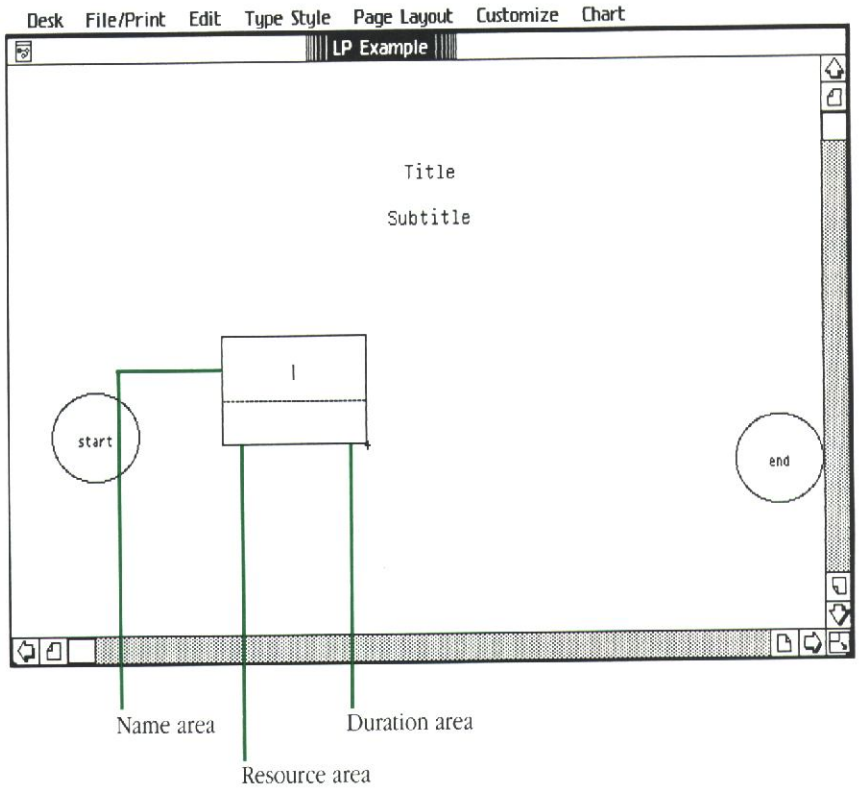
- Draw a task box.
- Optionally convert the task box to a milestone circle.
- Label the task box or milestone circle.

Tasks and milestones are arranged on a chart from left to right with the leftmost box or circle representing the first project task or milestone and the rightmost box or circle representing the last project task or milestone. You connect each task and milestone with a line called an arrow to show the dependencies among them.

Drawing a Task Box

You draw a box for each project task you want represented on a LisaProject chart.

When you draw a task box on a chart, it looks like this:



You can draw task boxes of any size you want at any point on a LisaProject Schedule chart. You can change the size of a box (see Expanding or Reducing the Size of a Task or Milestone). You can also move a task by selecting it and moving it to the location you want (see Moving a Task or Milestone), or you can delete it (see Deleting a Task or Milestone).

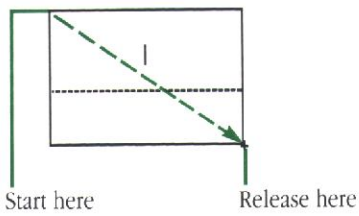
Each box is divided into two sections. The top portion is for the task name; the bottom is for the resource name and the duration.

All the boxes for one chart may not fit on a single piece of LisaProject paper. If this is the case, you can add pages to the right or bottom of a chart as you need them (see Expanding a Chart).

To Draw a Task Box:

1 ▸ Move the drawing pointer, **+**, to the point in the drawing area of the window where you want to draw the task box.

2 ▸ Press and hold down the mouse button, and move the pointer diagonally to the lower right corner of the box.



3 ▸ Release the mouse button when the box is the size you want.

Drawing a Milestone Circle

Milestone circles mark the start and end of a project as well as other important project events. Milestones can help to summarize project events and simplify complex dependencies. The start and end milestones are automatically created for you each time you tear off a piece of LisaProject stationery.

To Draw a Circle:

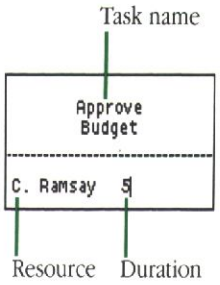
1 ▸ Draw a box.

2 ▸ Open the **Customize** menu and choose **Change Task to Milestone.**

Labeling a Task Box

You label each box with the name of the task, the resource(s) assigned to it, and the duration.

Each box has three areas: The task name area, the resource area, and the task duration area. Label the box by typing the appropriate information in each area.



You can enter all, some, or no labels on each task box. You may want to label the task box with the name only and then enter the other information as it becomes available.

All labels are automatically centered in each area of a task box as they are typed. If a label extends beyond the boundaries of a task box, the box expands as you type to accommodate the label.

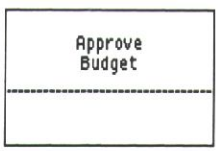
You can correct errors as you type by pressing the Backspace key. However, you cannot backspace across label area boundaries. You can edit task box labels at any time by selecting the label or part of a label and retyping the label or selecting the label, opening the **Edit** menu and choosing **Cut**, **Copy**, or **Paste**. (See Changing a Label or a Field Entry.)

To Label a Task Box:

When you draw a task box, the box is automatically selected and an insertion point appears in the task name area of the box. If the task is selected, begin with step 2.

1 ▸ Set the insertion point in the name area of the task box by clicking the mouse button there once.

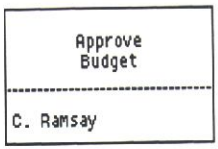
2 ▸ Type the task name. This is the name of each specific task. The name can be more than one line long and can contain up to 50 characters on each line.



▸▸▸

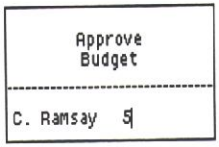
3 ▶ Press the Tab key to move the insertion point, | , to the resource area of the task box. You can also click once in the resource area, using the mouse.

4 ▶ Type the name of the resource assigned to the task. The resource may be a person, equipment, a building or location, or a combination of these. Each line represents a separate resource required to perform the task. Each line can be up to 50 characters long.



5 ▶ Press the Tab key to position the insertion point in the task duration area. You can also use the mouse to move the insertion point, | . Click the mouse button once to select the duration area.

6 ▶ Type the number of days you expect it will take to complete the task. The number can be from 1 to 999. The number you enter represents the number of full days required for a resource to complete a task. Type only the number of days; for example,"5" not "5 days."



7 ▶ If there is more than one resource working on this task, press Return and repeat steps 4, 5, and 6 for each additional resource.

Labeling a Milestone Circle

You label a milestone circle with the name of the major project step which the circle represents.

You can label a circle before or after you convert it from a box. (See Labeling a Task Box.)

All labels are automatically centered in the circle as you type. You can enter multiple lines by pressing the Return key at the end of each line. If the label extends beyond the circle boundary, the circle automatically expands to accommodate it.

A milestone label can be more than one line long. Each line can be a maximum of 50 characters long.

You can also change a milestone label at any time. (See Changing a Label or a Field Entry.)

To Label a Milestone Circle:

1 ▸ Move the pointer, , into the circle.

2 ▸ Set the insertion point, | .

3 ▸ Type the milestone circle label.

Connecting Task Boxes and Milestone Circles

You connect boxes and circles to show the dependencies among them. Connecting lines, known as arrows, can be drawn as you draw each box or circle, or you may connect boxes and circles after the entire chart has been drawn. These lines or arrows must be drawn from left to right.

Connecting lines indicate the interdependence among tasks and milestones. Tasks are connected in the order in which they must be completed. No task or group of tasks can begin until all connected tasks to the left have been completed. In this way dependencies are established and LisaProject is able to schedule each task.

Once connected, the arrow moves with either object to which it is connected. If you move either task box connected by the line, the line moves to accommodate the change. This includes lengthening the line or changing its angle. However, you should not move a task or milestone in such a way as to make an arrow go from right to left.

To Draw Connecting Lines between Boxes and Circles:

1 ▸ Move the pointer into the box or circle on the left.

2 ▸ Press and hold down the mouse button and extend the line to the right into the destination box or circle. You can change the angle of the line as long as you hold down the mouse button. When the line is in the position you want, release the mouse button.

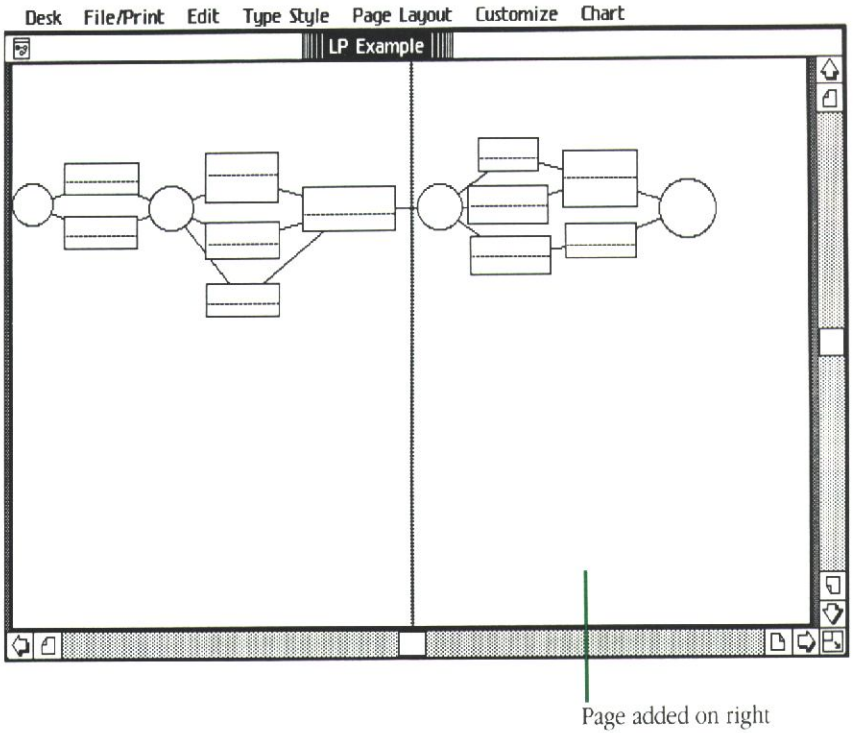
Expanding a Chart

As you create or revise a LisaProject Schedule chart by adding tasks and milestones, it may be necessary to expand the chart. You do this by adding pages.

Adding Pages to a Chart

You can expand a LisaProject chart by adding pages on the right or on the bottom. This is necessary when you add more tasks than can fit on one page of a chart.

Each new LisaProject chart initially has one page. It is displayed on the screen when you tear off a piece of LisaProject stationery. When you begin creating or revising a schedule chart it is often necessary to increase the chart's size. You can do this by adding a page to the right or bottom of your current chart. You can continue to add pages until you reach the maximum schedule chart size, 96 inches wide and 48 inches long. LisaProject warns you when you try to exceed the maximum.



When you add a page, either to the right or to the bottom of an existing part, the page boundary is not shown. You have to choose **Preview Pages** to display page boundaries. (See Previewing Pages.) Use the scroll bars to move from one page to the next.

Pages are added to Schedule charts only. You can add one or more pages to the right or to the bottom. If you have added a page to the right and a page to the bottom, the next page added to the bottom will be under the rightmost page. If you have added three pages to the right and add a page to the bottom, three pages are added under the existing ones, so you will always have a complete rectangle instead of an L-shaped chart. Any pages which you add to a chart, but have not used, are deleted when you **Save and Put Away**.

You can display more than one page on the screen by reducing the chart to 70% of its original size. You can view the entire chart by reducing it to fit on the screen at one time. (See Viewing a Schedule Chart.)

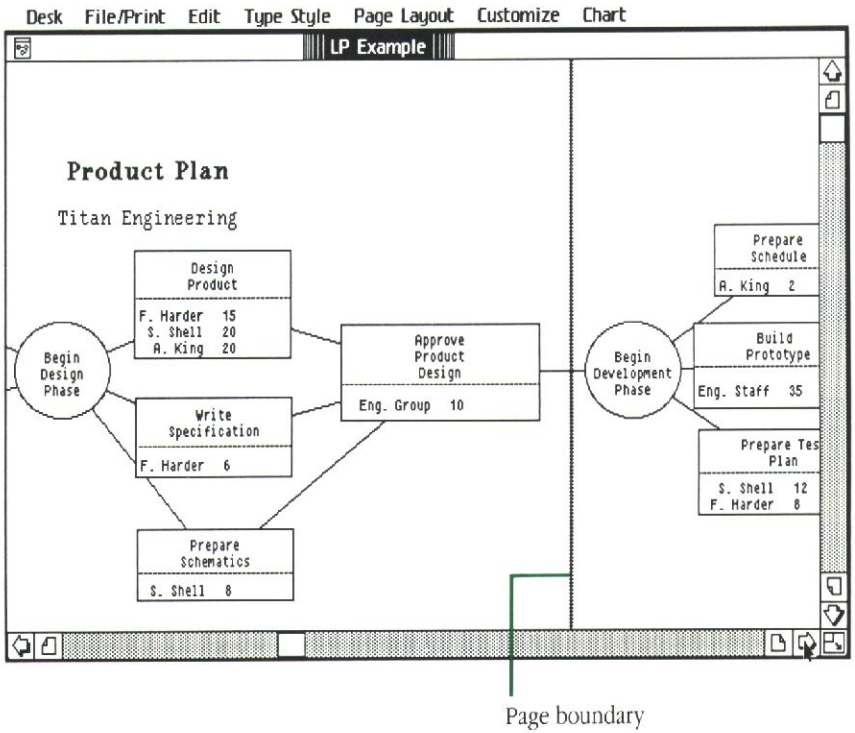
When you print a chart, each page is printed separately. When all pages have been printed, simply tape them together or pin them to a wall display board to view the entire chart.

To Add Pages to a Chart:

1 ▸ Open the **Page Layout** menu and choose either **Add Page on Right** or **Add Page on Bottom**.

Previewing Pages

Once you have added pages to a LisaProject chart, you can show the individual page boundaries by previewing the pages. Previewing pages lets you arrange task boxes and milestone circles on a multipage chart. It is necessary to preview pages before printing to be sure a task or milestone does not cross on a page boundary.



Displaying page boundaries is most useful with charts that have been reduced to show several pages on the display screen. This can help you align tasks or milestones to indicate the proper relationship between them.

Since charts are printed one page at a time, previewing pages can help you check for pages which break on a task box or milestone circle. By previewing pages you can reformat your chart before it is printed. This will save you time and make it easier to tape or pin your chart together to view once it has been printed.

To Preview Pages:

1 ▸ Open the **Page Layout** menu and choose **Preview Pages**.

This displays a solid grey line between each page.

Viewing a Schedule Chart

You can view a LisaProject Schedule chart in three sizes:

- Actual size.
- Reduced to 70%.
- Reduced to fit.

These different views can help you position and connect task boxes and milestone circles. You can also display the page boundaries in any of these views.

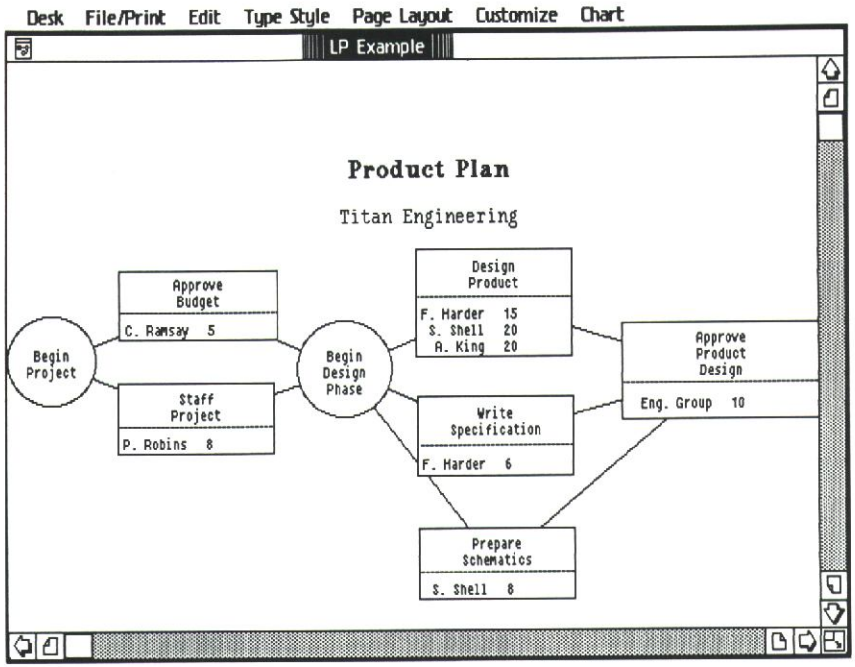
When you create a LisaProject chart, it is displayed as **Show Actual Size**. This view displays one page of a LisaProject chart. The tasks, milestones, and text are the size they will be if you print the chart.

LisaProject charts that are **Reduced to 70%** or **Reduced to Fit** are used to display more than one page. **Reduce to 70%** shows a 70% reduction of the chart, and **Reduce to Fit** reduces the entire chart to the size of your LisaProject window. You can view large charts by repeatedly reducing the chart.

Show Actual Size

Show Actual Size is in effect when you make a LisaProject chart. All chart elements, labels, tasks and milestones are displayed on the screen the size they will appear when the chart is printed.

When Show Actual Size is in effect, all LisaProject elements are displayed. This includes dates if they are shown. (See Displaying Dates.)

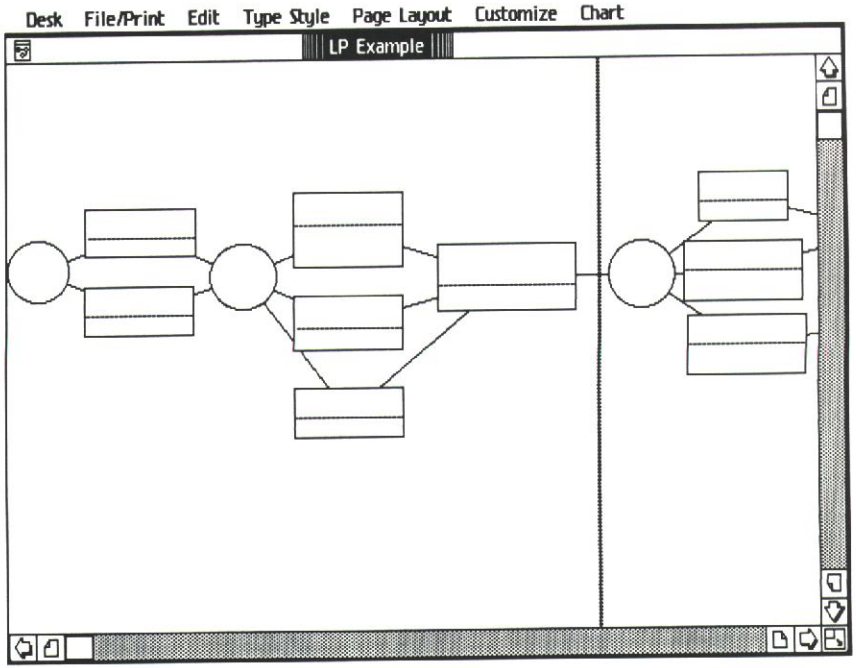


To Show Actual Size:

1 ▸ Open the **Page Layout** menu and select **Show Actual Size.**

Reducing a Chart to 70% of its Current Size

You can reduce a LisaProject chart to 70% of its current size. This makes a larger portion of the chart visible on the screen at one time. When you **Reduce to 70%**, only the task box and milestone circle outlines, plus any connecting lines, are displayed. All labels and dates are removed. You can preview pages on a chart that has been reduced to help you arrange tasks and milestones. You can reduce a large chart several times to make it easier to see on the screen.

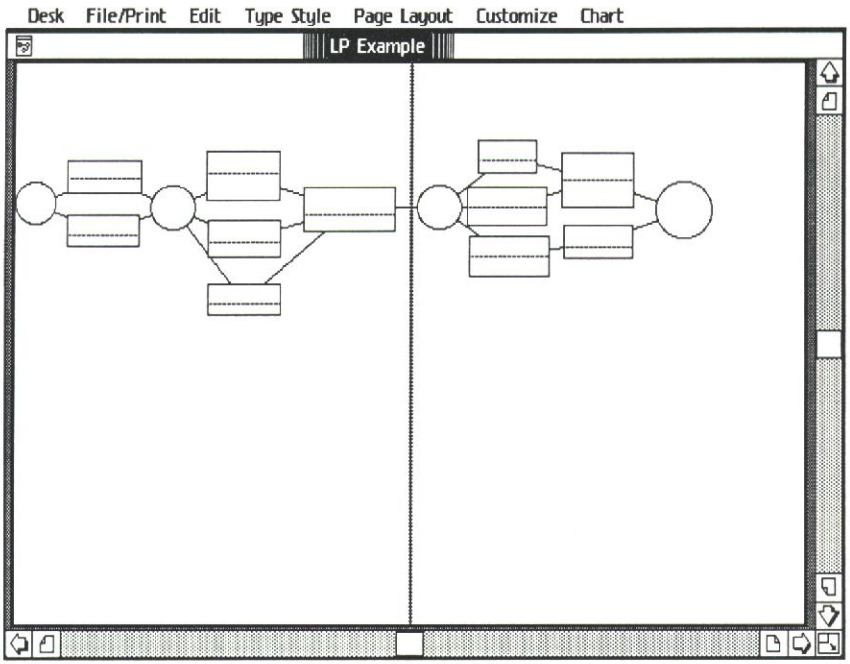


To Reduce a Chart to 70%:

1 ▸ Open the **Page Layout** menu and choose **Reduce to 70%**.

Reducing a Chart to Fit on the Screen

When you **Reduce to Fit**, all pages of a LisaProject chart are displayed on the screen. Only task and milestone outlines as well as connecting lines are displayed; all labels and dates are removed.



You can preview pages on a chart which is reduced to fit on the screen. Reducing a LisaProject chart to fit on a screen makes it easy to arrange and align task boxes and circles on large charts. This is particularly helpful when you are inserting boxes and circles. To reposition a task box in a reduced size, select it in actual size first. This makes it easier to find when the chart is reduced.

To Reduce a Chart to Fit on the Screen:

1 ▸ Open the **Page Layout** menu and choose **Reduce to Fit**.

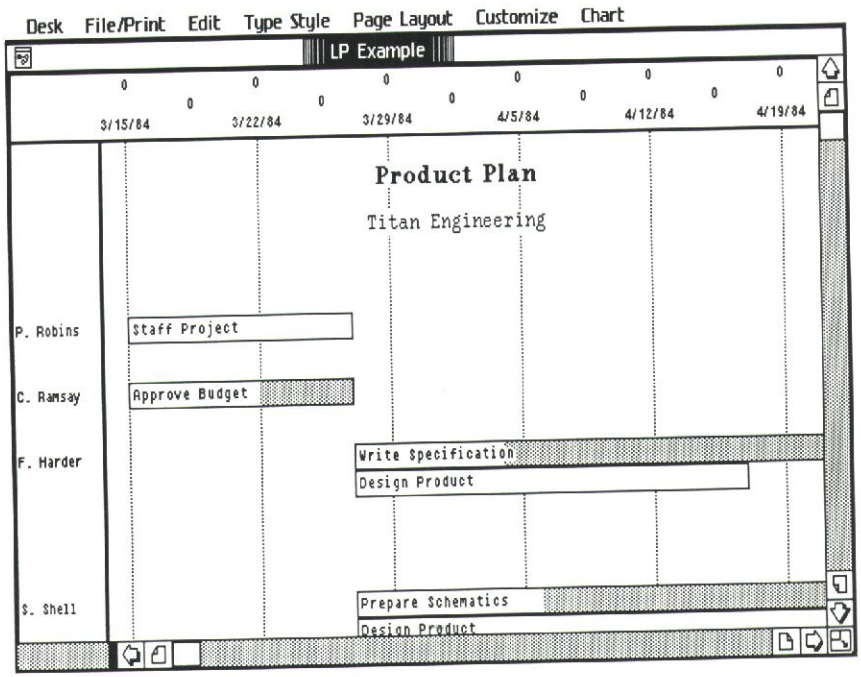
Viewing a Resource Chart and a Task Chart

When you create a Schedule chart, LisaProject automatically creates two other charts, a Resource chart and a Task chart.

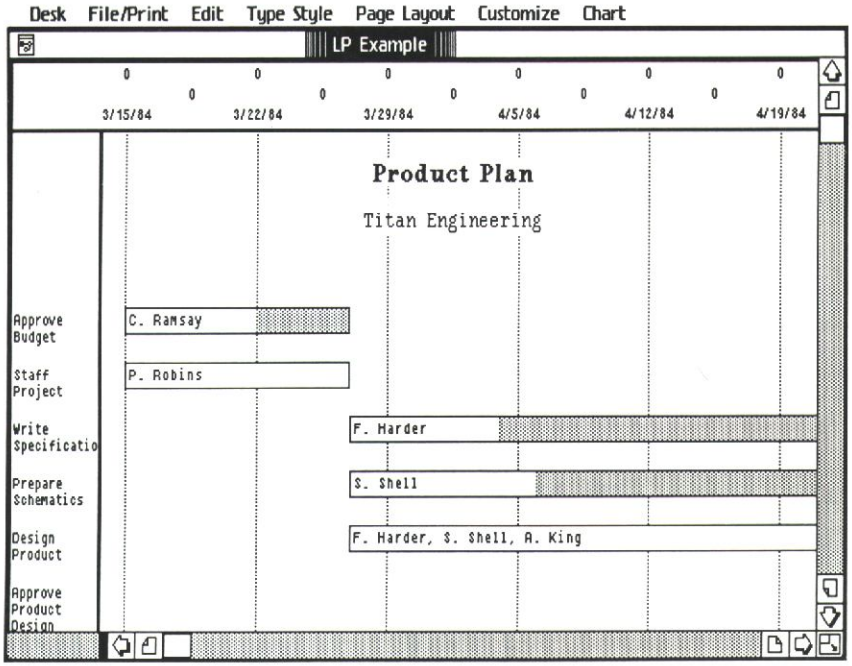
Task and resource charts graphically show you:

- The slack time for individual resources and tasks.
- Projects that are currently behind schedule.
- The status of a project in terms of the completed portion of any task, the work remaining, and the slack time.

All three charts present the same information, but they display it in a different way.



Resource Chart

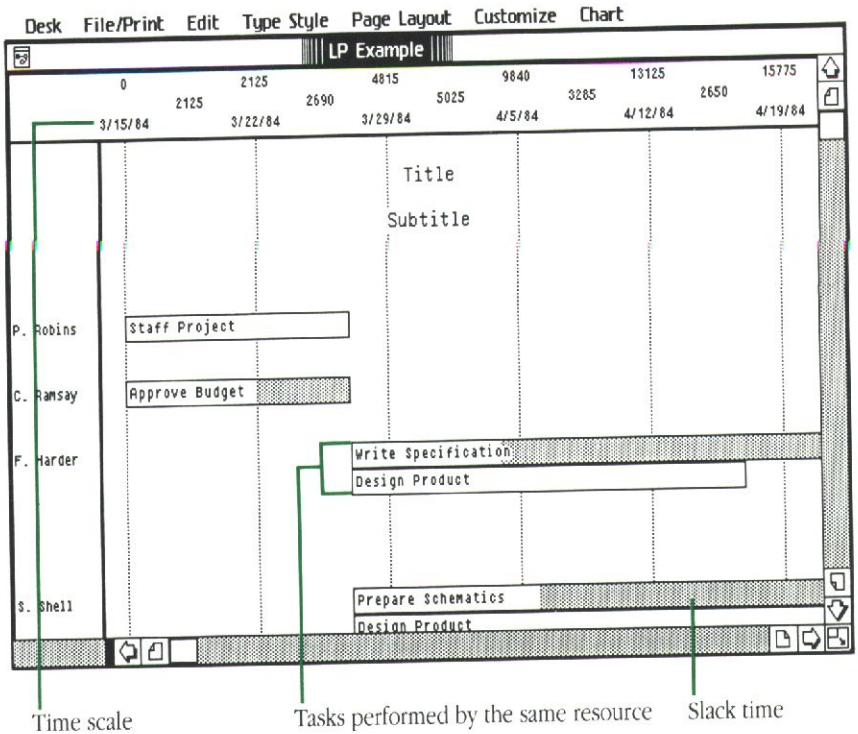


Task Chart

Both Task charts and Resource charts are created automatically when a Schedule chart is made. You cannot, however, create or revise Task or Resource charts. All revisions, such as adding tasks or changing scheduled dates, are done to a Schedule chart. You can, however, add individualized chart titles and subtitles to Task and Resource charts even if this has already been done on the Schedule chart. (See Adding chart Title and Subtitle.)

Viewing a Resource Chart

Resource charts display the information on a Schedule chart in a different way. All project resources are displayed in the leftmost column. They are grouped by resource; that is, all tasks performed by the same resource are shown together. Incremental and Cumulative project costs and the chart time scale are displayed across the top of the chart. The time scale is automatically displayed as 1 week, however, you can change it to be shown as 2, 4, or 8 weeks. Tasks to be performed by each resource are displayed as horizontal bars. The length of the bar indicates the duration of the task. Slack time for a task is shown by cross-hatching in the bar. Slack time is the additional time the task may last without affecting the overall completion time for the project. Critical tasks are those with no slack time.



You can use a Resource chart to identify available resources or to track project status. To track project status, display the current day of the project. (See Setting Calendar Dates.) Any tasks to the left of the current date line that have work to be done are behind schedule.

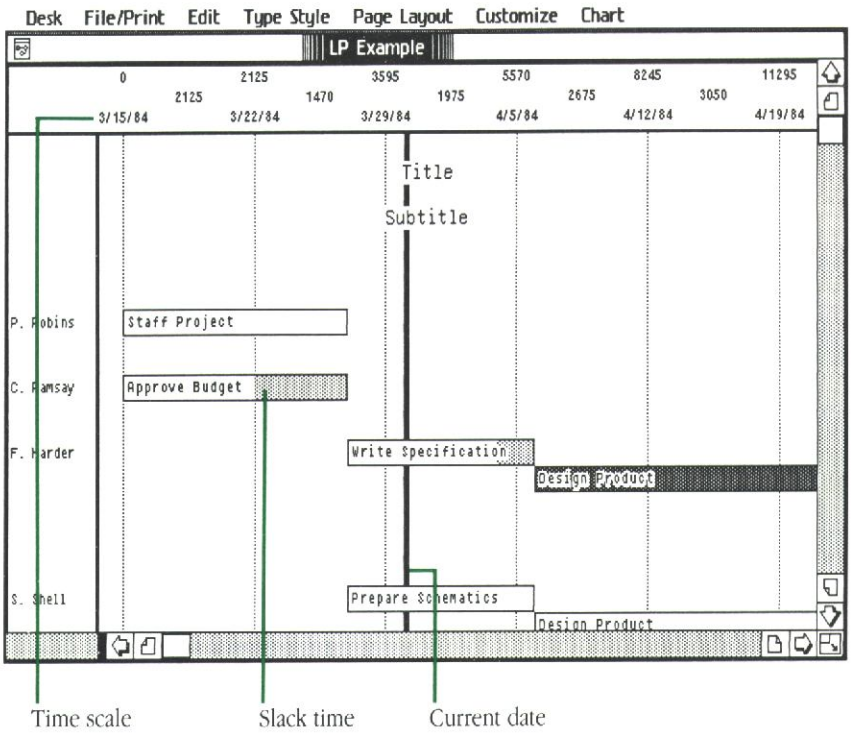
To View a Resource Chart:

Open the **Chart** menu and choose **Resource**.

Viewing a Task Chart

Task charts display the information you have entered on a Schedule chart in a new format. Tasks are listed in the left column in the order of their early start date. The first task listed is the first to start. Cumulative and incremental costs and the chart time scale appear across the top of the chart.

The time scale is automatically displayed in one week intervals; however, it can be changed to 2, 4, or 8 week intervals to compress the chart and display a greater period of time on the screen (see Set the Time Scale). Resource labels appear on the horizontal bars that indicate the duration of the task.



One of the most common uses of a Task chart is to evaluate which tasks are behind schedule on any given day. To do this you must set the current date (see Setting Calendar Dates). Once set, the current date is displayed on the chart as a dark vertical line.

All tasks are grouped on the Task chart in order of their early start date (see Setting and Removing Scheduled Dates). You can change the early start date by setting a scheduled date.

A Task chart displays slack time for individual tasks. Slack time is displayed as a cross-hatched area on the task bar. Critical tasks do not have any slack time.

To View a Task Chart:

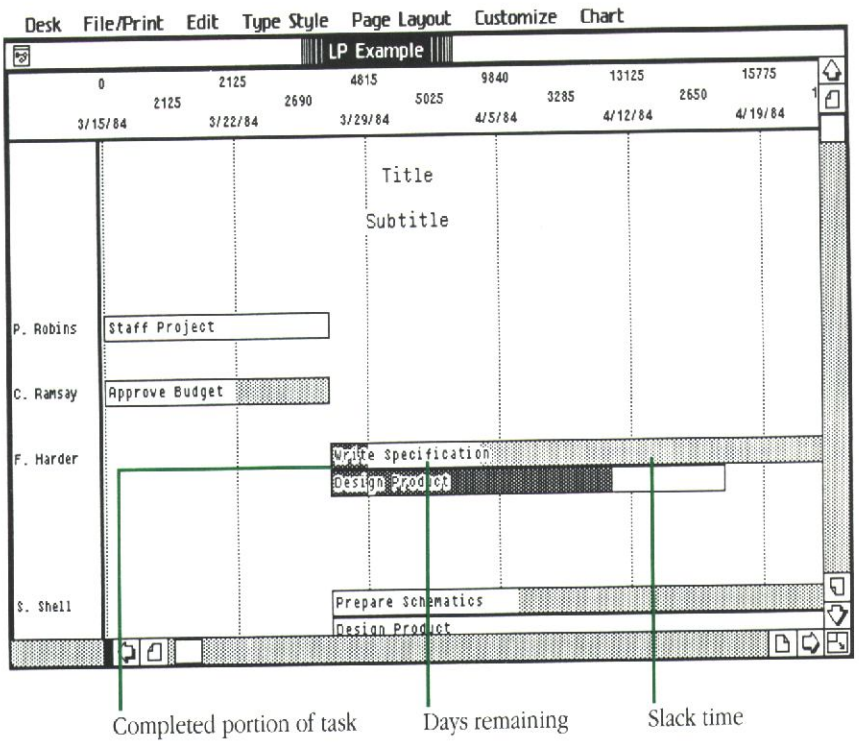
Open the **Chart** menu and choose **Task**.

Setting Remaining Days

You can update a Resource chart by setting the remaining work days for a specific task. In this way, you can determine which tasks are on schedule.

Remaining work days can be set for an individual task while a Resource chart is displayed. You cannot set remaining work days from a Task chart or a Schedule chart.

Remaining work days are displayed as a white area in the horizontal bar representing each task on a Resource chart. The heavy shading shows the completed portion of the task, and the light shading on the right shows any slack time.



You can set the remaining work days to help track project status. Set the current day of the project (see Setting Calendar Dates). Any tasks to the left of the current date line that have work to be done are behind schedule.

To Set Remaining Days:

1 ▶ Select any task on a Resource chart.

2 ▶ Open the **Customize** menu and choose **Work Days Remaining**.

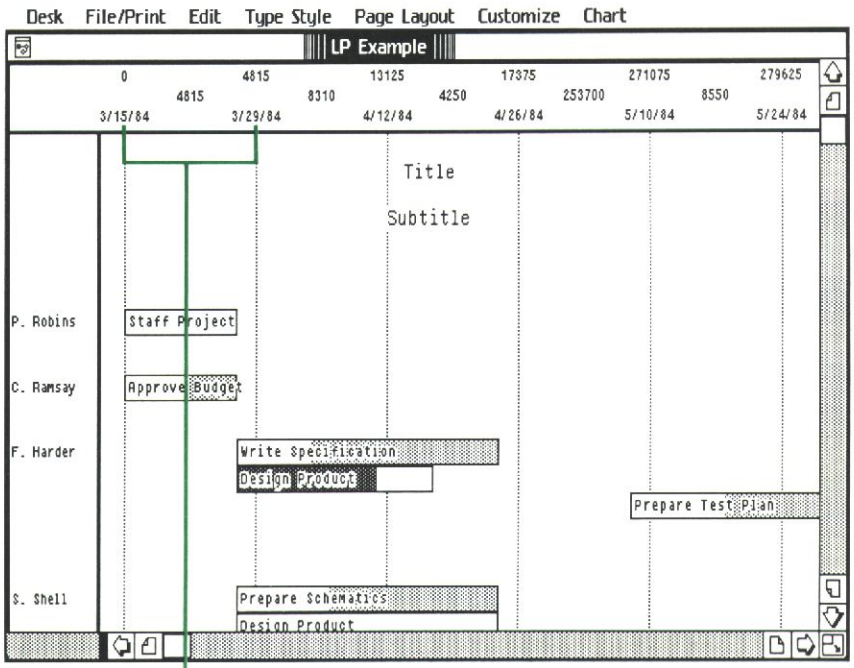
3 ▶ Type the number of days remaining in the selected area.

4 ▶ Click **OK** to redisplay the Resource chart.

Setting the Time Scale

Resource and Task charts are displayed with a time scale of one week. You can change this to 2, 4, or 8 weeks. This allows you to compress the chart to display a longer period of time on the screen.

The time scale is displayed across the top of a Resource chart and a Task chart.

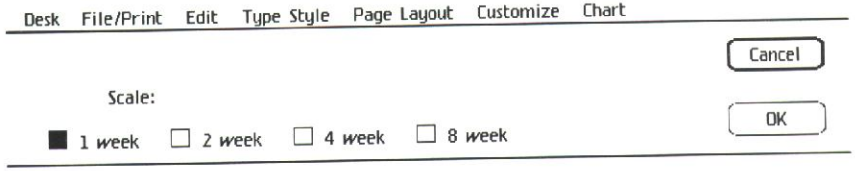


Two-week intervals

Resource charts and Task charts have the same time scale. Changing the time scale for a Resource chart changes the time scale for the associated Task chart. The reverse is also true.

To Set the Time Scale:

1 ▶ Open the **Customize** menu and choose **Set Time Scale**. This displays the Set Time Scale dialog box.



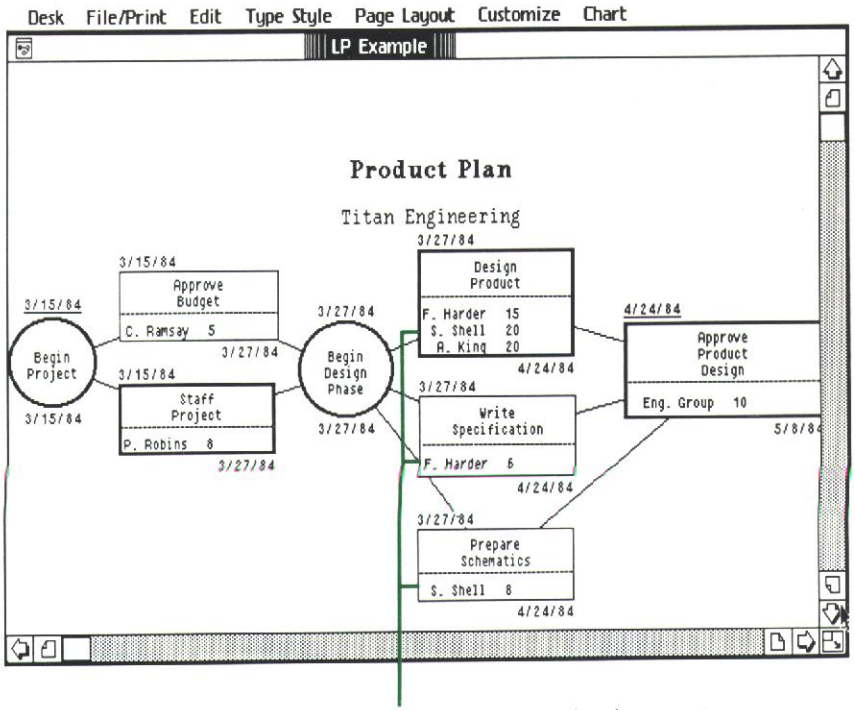
2 ▶ Select the time scale — either 1, 2, 4, or 8 weeks.

3 ▶ Click **OK** to save the time scale.

Setting the Scheduling Method

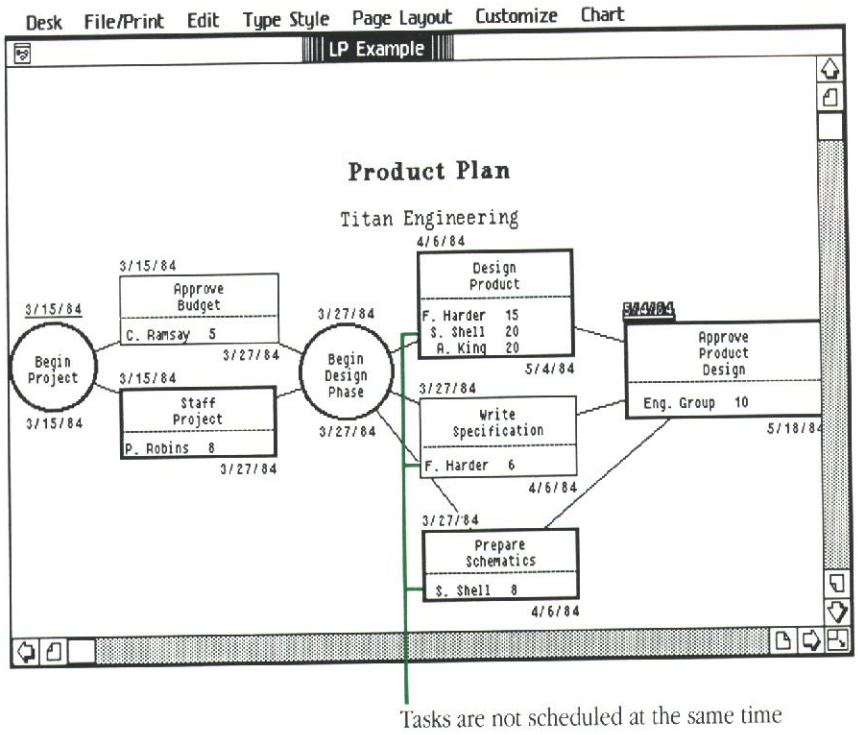
LisaProject calculates start and finish dates for each project task and milestone by one of two methods, parallel scheduling or resource scheduling. When you create a chart, parallel scheduling is in effect.

Parallel scheduling assumes that there is an unlimited supply of each resource; therefore, the same resource can be used for two different tasks that are performed at the same time.



Parallel Scheduling

Resource scheduling assumes that resources are limited; therefore, a resource can be used for only one task at a time. If a project has the same resource being used for two parallel tasks, LisaProject will schedule the tasks one after the other. The tasks will not be scheduled to be performed simultaneously.



Resource Scheduling

To Select the Scheduling Method:

1 ▸ Open the **Customize** menu and choose **Parallel Scheduling** or **Resource Scheduling**.

Setting Project Dates

LisaProject schedules project tasks using two kinds of dates:

- Calendar dates.
- Scheduled dates.

LisaProject automatically begins scheduling tasks on the first working day of the calendar year, that is, January 1, or on the working day closest to it.

To calculate a schedule based on your start date, you need to set a scheduled date for the start milestone. You can also set a start date for all project tasks and milestones.

LisaProject calculates four dates for each project task: the early start date, the late start date, the early finish date and the late finish date. You can display any or all these dates by choosing **Display Dates**. The dates are automatically calculated by LisaProject when you change a scheduled date, a task resource, or a duration. Since milestones have no duration, only two dates are assigned, the start and finish dates.

You can choose to display the dates on a Schedule chart. You can display any or all the dates for each task or milestone. Dates are not displayed automatically when you create a Schedule chart, you have to choose to display them.

Displaying Dates

You can display the start and finish dates for each task or milestone. Display dates reflect the start and finish dates for each project task and milestone. These dates are calculated on calendar dates unless scheduled dates have been set. Displaying dates lets you know the schedule associated with each task. When you create a chart, the dates are not displayed unless you choose to display them. It saves time to draw the chart without the dates displayed.

With LisaProject you can display any or all of the following dates:

- Early start date.
- Late start date.
- Early finish date.
- Late finish date.

Early Start

The Early Start date is the earliest possible date a task can be started. You can display an early start date for each project task and milestone.

Late Start

The Late Start date is the latest possible date the task can be started.

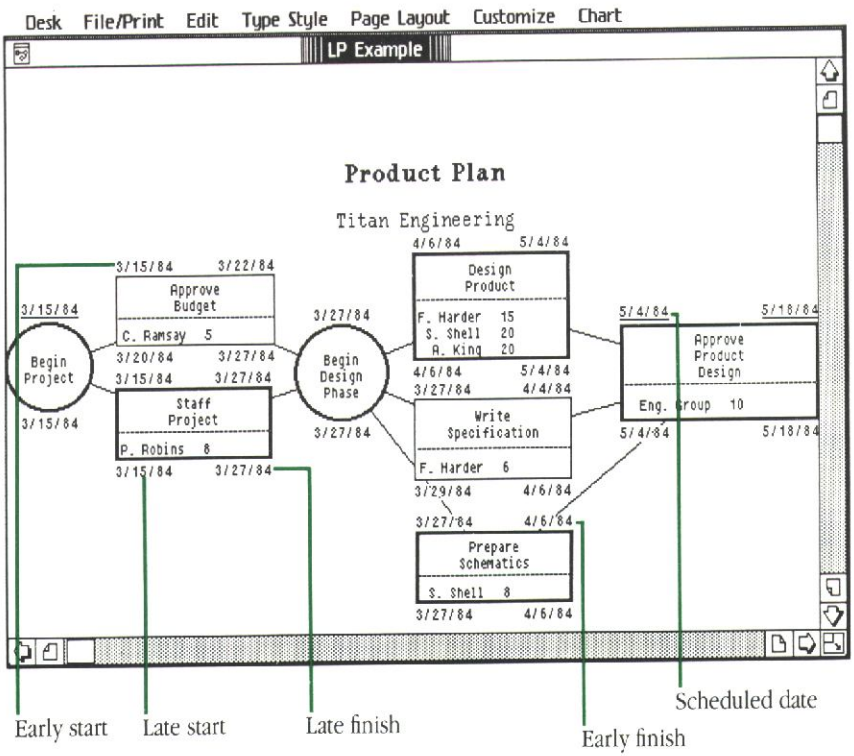
Early Finish

The Early Finish date is the earliest possible time a task can finish based on the project duration and an early start date, unless you set a finish date on the end milestone.

Late Finish

The Late Finish date is the latest possible time a task or milestone can finish without changing the end date of the project. Since milestones do have not a duration, their late start and late finish dates are the same.

You can display all dates or one, two, or three dates for each project task. When you make a new project chart, no dates are displayed on the chart. Dates are displayed only if you have chosen **Display Dates**. Dates are displayed for each project task and milestone above and below the task box or milestone circle on the LisaProject chart. Dates that have been calculated based on a scheduled date are underlined when they are displayed. Once a scheduled date has been set, it remains underlined even if LisaProject reschedules the task.

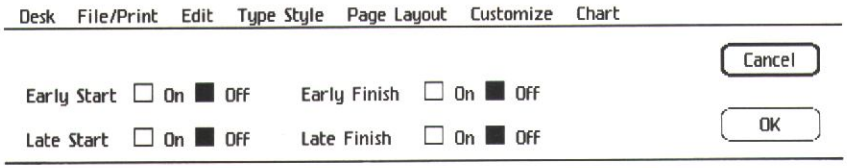


Dates are calculated by LisaProject based on calendar dates, scheduled dates, task duration, and resources. Dates are changed by changing any of these variables. You do not change the dates directly.

To Set the Display Dates:

1 ▸ Open the **Customize** menu and choose **Display Dates.**

This displays the Display Dates dialog box.



2 ▸ Click **On** or **Off** for the date(s) you want to display on the Schedule chart.

Setting Calendar Dates

Set the calendar dates to define the year or years during which the project will occur, the number of working days each week, and the dates of all nonworking holidays during the year. You can set and change the dates in the same way.

Calendar dates are used by LisaProject to automatically calculate a start and finish date for each project task. LisaProject automatically begins calculating a project on the first working day of the calendar year unless you set a specific scheduled date for the start milestone to indicate differently. Specific scheduled dates can override any date established on the basis of a calendar date.

You use the Calendar dialog box to set the following dates:

- The calendar year or years during which the project will occur.
- The number of working days per week.
- The day on which you are viewing the chart.
- Holidays.

The LisaProject calendar begins on January 1 and ends on December 31 of any specified year. You can specify calendar dates for 1 to 10 years, for example 1984 to 1994. LisaProject assumes a project begins on the first working day of the specified calendar year unless you indicate differently by setting a scheduled date for the start milestone.

LisaProject assumes 5 working days each week; however, you can set Working Days Per Week for 1 to 7 days. Each week begins on Monday; therefore if you schedule five working days, tasks are scheduled Monday through Friday. LisaProject will not schedule any work to be done on days that are not work days.

The Current Day of Project is the day on which you are viewing the project chart. This date is displayed as a dark vertical line on a Task chart and Resource chart only. It does not appear on the Schedule chart. The Current Day of Project does not affect scheduling. You can, however, use it to indicate which tasks are behind schedule on any given day. (See Viewing a Resource chart and a Task chart.)

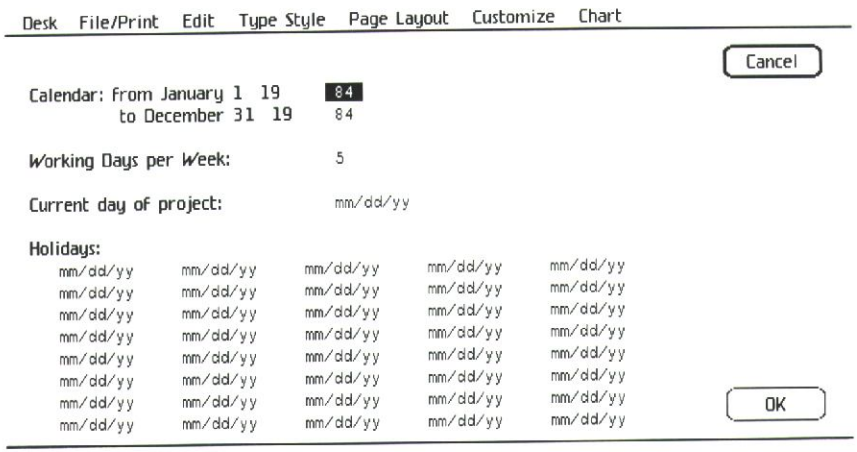
Holidays are any nonworking days during the work week. LisaProject will not schedule on any nonwork day, so you do not have to enter holidays that fall on normal weekends.

You can enter up to 40 holidays for any project.

To Set the Calendar Dates:

1 ▸ Open the **Customize** menu and choose **Calendar**.

This displays the Calendar dialog box. The calendar year is automatically selected.



2 ▸ Type the last two digits of the year in which the project starts; for example, 84.

3 ▸ Press the Tab key to select the end date for the project, and type the last two digits of the year in which the project ends; for example, 86. Press the Tab key to select Working Days per Week.

4 ▸ Type the number of working days in each week. The number can be from 1 to 7.

5 ▸ Press the Tab key to select the Current Day of Project, and type the date of the day on which you are viewing the project chart. Enter the date using the format, mm/dd/yy; for example, 6/13/84.

6 ▸ Press the Tab key to select the first holiday date, and type the date(s) of each nonworking holiday. Enter holidays using the format mm/dd/yy; for example, 11/24/84.

7 ▸ Press the Tab key to move to the next holiday date, and enter the next date. Repeat this procedure until you have entered all the holiday dates.

8 ▸ Click **OK** to save the calendar dates.

Setting and Removing Scheduled Dates

Scheduled dates can be set for each project task and milestone. Scheduled dates reflect actual project dates. Scheduled dates are underlined when you display the project dates to show that you have set the date as a scheduled date. You can set scheduled dates for any or all of the project tasks. When a scheduled date is set, the early and late start and finish dates for the entire chart are automatically recalculated. In this way you can update your chart to reflect any changes in the project schedule.

Scheduled dates override dates calculated on the basis of calendar dates. Scheduled dates can be set at any time. You can set two scheduled dates for each project task or milestone: a start date and a finish date. These dates may be changed at any time. When a scheduled date is entered, the dates for all following project tasks and milestones are automatically recalculated.

You can enter ASAP (as soon as possible) as a project finish date. If you enter ASAP, LisaProject will calculate the earliest finish date possible given the start date and duration of individual tasks, unless two or more tasks are in a parallel position on a chart and require the same resource. If this is the case, you can force LisaProject to schedule one project ahead of the other by setting a scheduled start date for tasks you want scheduled first.

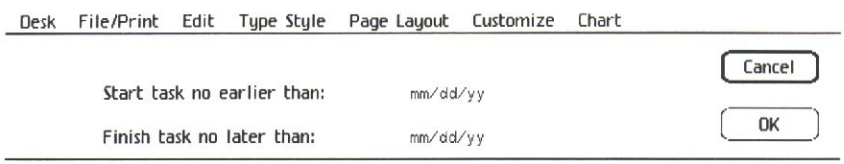
If you set a scheduled date to fall on a weekend or a holiday, LisaProject advances that date to the first working day following the scheduled date you set. If you set a scheduled date that is impossible to meet, LisaProject schedules the task at the earliest feasible time and displays it in shadow text to show that the scheduled date you set cannot be met.

To Set a Scheduled Date for a Task or Milestone:

1 ▸ Select the task box or milestone circle for which you want to set a scheduled date.

2 ▸ Open the **Customize** menu and choose **Set Scheduled Dates.**

This displays the Set Scheduled Dates dialog box.



3 ▸ Type the task or milestone start date in the *Start task no earlier than:* area and then press the Tab key to move to the *Finish task no later than:* area.

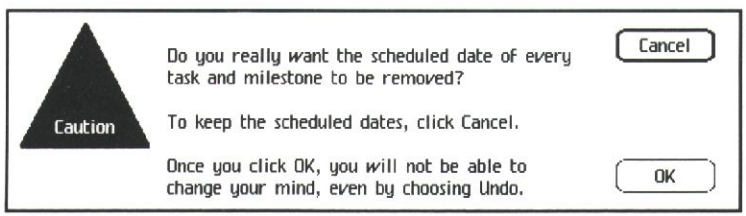
4 ▸ Type the task or milestone end date in the *Finish task no later than:* area. Use the date format mm/dd/yy; for example, 8/24/84.

5 ▸ Save the scheduled dates by clicking **OK**. If you want to leave the dates unchanged, click **Cancel**.

To Remove All Scheduled Dates:

1 ▸ Open the **Customize** menu and choose **Remove Scheduled Dates.**

This displays a warning box.


Caution
Do you really want the scheduled date of every task and milestone to be removed?
To keep the scheduled dates, click Cancel.
Once you click OK, you will not be able to change your mind, even by choosing Undo.
Cancel
OK

2 ▸ Click **OK** to remove all scheduled dates.

You can set or change scheduled dates for individual tasks and milestones at any time. You can remove an individual scheduled date by setting the date to the format mm/dd/yy.

Setting Project Costs

You can assign costs to resources and to tasks. LisaProject uses this information to calculate the project cash flow. LisaProject also displays some cost figures in the Task Table summarizing all information for each project task.

Entering Resource Costs

You can assign a cost to each task resource. Resource costs are entered as number of dollars per day.

When you label a task box with a resource, LisaProject automatically places the resource name in the Resource Cost Entry Table. You display the table to enter the cost associated with each resource. You cannot add new project resources to the table.

LisaProject assigns the cost of the resource on a daily basis over the duration of the project to calculate the Cash Flow Table.

To Enter Resource Costs:

1 ▸ Open the **Chart** menu and choose **Resource Cost Entry**.

This displays a table that lists all project resources.

	Resource Name	Unit Cost
1	P. ROBINS	0
2	C. RAMSAY	0
3	F. HARDER	0
4	S. SHELL	0
5	A. KING	0
6	ENG. GROUP	0
7	ENG. STAFF	0

2 ▸ Select the cost field.

3 ▸ Type the amount in dollars associated with the resource. Press Tab to move to the next cost field.

4 ▸ Add a title and subtitle. (See Adding a Chart Title and Subtitle.)

Adding Task Costs

You can assign a fixed cost to each project task. Fixed costs might be equipment or building rental, insurance, or administrative services. These costs are entered in the Task Cost Entry Table as fixed dollar amounts.

LisaProject assigns the entire fixed cost of a task to the early start day when calculating the cash flow figures.

When you add a task to a chart, LisaProject automatically enters the task name on the Task Cost Entry Table. You assign costs by displaying the table and entering the amounts in dollars. You cannot add a new task to the Task Cost Entry Table.

You can enter revenue associated with a task by preceding the amount with a minus (−) sign.

To Assign Task Costs:

1 ▶ Open the **Chart** menu and choose **Task Cost Entry**.

This displays the Task Cost Entry Table.

	Task Name	Fixed Cost
1	Begin Project	0
2	Staff Project	0
3	Approve Budget	0
4	Begin Design Phase	0
5	Design Product	0
6	Write Specification	0
7	Prepare Schematics	0
8	Approve Product Design	0
9	Begin Development Phase	0
10	Build Prototype	0
11	Prepare Schedule	0
12	Prepare Test Plan	0
13	Write Evaluation	0
14	Test Product	0
15	Release to Manufactur	0

2 ▶ Select the fixed cost field associated with a specific task by clicking once in that field.

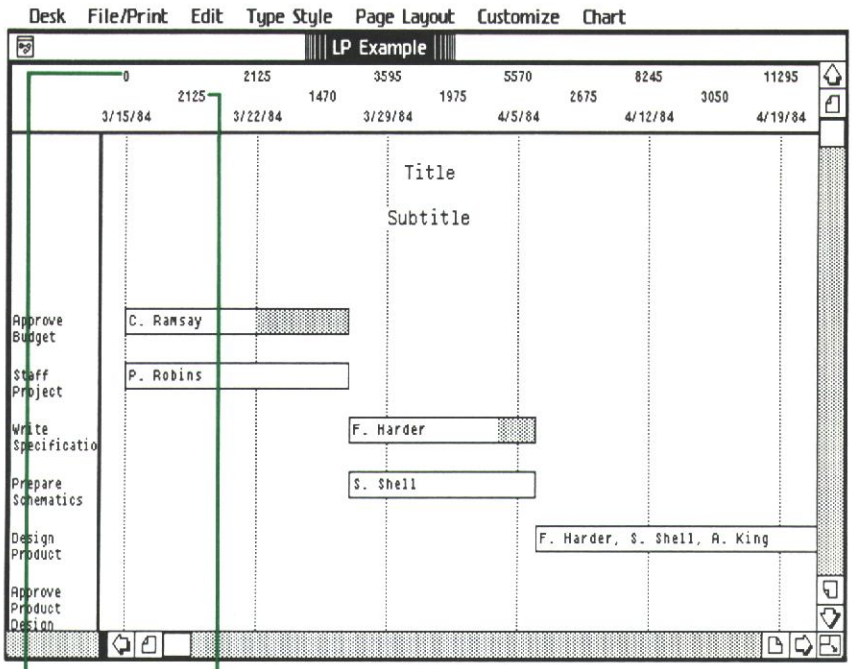
3 ▶ Type the amount in dollars associated with the task. Press Tab to move to the next field.

4 ▶ Add a title and subtitle (see Adding a Chart Title and Subtitle.)

Displaying the Cash Flow Table

LisaProject calculates the cash flow for a project based on resource costs and fixed costs associated with each task. The fixed cost is incurred on the early start day of the task. The resource costs are incurred over the duration of the task. LisaProject calculates cash flow on both an incremental and cumulative basis. These figures are displayed on the Cash Flow Table and across the top of both the Resource chart and the Task chart.

Start	Incremental	End	Cumulative
3/15/84	2125	3/22/84	2125
3/22/84	1470	3/29/84	3595
3/29/84	1975	4/5/84	5570
4/5/84	2675	4/12/84	8245
4/12/84	3050	4/19/84	11295
4/19/84	3050	4/26/84	14345
4/26/84	2250	5/3/84	16595
5/3/84	1150	5/10/84	17745
5/10/84	925	5/17/84	18670
5/17/84	254275	5/24/84	272945
5/24/84	4475	5/31/84	277420
5/31/84	3675	6/7/84	281095
6/7/84	3205	6/14/84	284300
6/14/84	2500	6/21/84	286800
6/21/84	2500	6/28/84	289300
6/28/84	2500	7/5/84	291800
7/5/84	152940	7/12/84	444740
7/12/84	2875	7/19/84	447615
7/19/84	1705	7/26/84	449320
7/26/84	200	8/2/84	449520



Since these figures are calculated from the task and resource costs, you cannot enter or change any information on the Cash Flow Table, nor can you enter or change the cost information displayed on a Task or Resource chart.

Amounts calculated on a Cash Flow Table generally represent costs. Revenue is indicated by a minus (−) preceding the amount. However, these are merely conventions and can be determined by your own accounting conventions.

To Display the Cash Flow Table:

1 ▶ Open the **Chart** menu and choose **Cash Flow Table**.

Displaying the Task Table

LisaProject produces a Task Table that summarizes the entire project on a task by task basis. You cannot enter or change any information on a Task Table. All information is calculated on the basis of information entered in the Schedule chart and the Resource and Task Cost tables.

	Task Name	Days	ES	EF	LS	LF	Fixed Cost	Rsrce Cost	Total Cost	Resource 1	Resource 2	Resource 3	Resource 4	Resource 5
1	Begin Project	0	3/15/84	3/15/84	3/15/84	3/15/84	0	0	0					
2	Staff Project	8	3/15/84	3/27/84	3/15/84	3/27/84	0	1600	1600	P. Robins				
3	Approve Budget	5	3/15/84	3/22/84	3/20/84	3/27/84	0	1125	1125	C. Ramsay				
4	Begin Design Phase	0	3/27/84	3/27/84	3/27/84	3/27/84	0	0	0					
5	Design Product	20	3/27/84	4/24/84	3/27/84	4/24/84	0	11200	11200	F. Harder	S. Shell	A. King		
6	Write Specification	6	3/27/84	4/4/84	4/16/84	4/24/84	0	1200	1200	F. Harder				
7	Prepare Schematics	8	3/27/84	4/6/84	4/12/84	4/24/84	0	1880	1880	S. Shell				
8	Approve Product Design	10	4/24/84	5/8/84	4/24/84	5/8/84	0	1850	1850	Eng. Group				
9	Begin Development Phase	0	5/8/84	5/8/84	5/8/84	5/8/84	0	0	0					
10	Build Prototype	35	5/8/84	6/26/84	5/8/84	6/26/84	250000	17500	267500	Eng. Staff				
11	Prepare Schedule	2	5/8/84	5/10/84	6/22/84	6/26/84	0	350	350	A. King				
12	Prepare Test Plan	12	5/8/84	5/24/84	6/22/84	7/10/84	0	4420	4420	S. Shell	F. Harder			
13	Write Evaluation	5	5/24/84	5/31/84	7/10/84	7/17/84	0	1175	1175	S. Shell				
14	Test Product	15	6/26/84	7/17/84	6/26/84	7/17/84	150000	7220	157220	A. King	F. Harder	S. Shell		
15	Release to Manufactur	0	7/17/84	7/17/84	7/17/84	7/17/84	0	0	0					

(Task table is wider than screen. Scroll to see entire table.)

The Task Table

Task Name Task name as entered on the Schedule chart.

Days The amount of time needed to complete the task. Days is entered as the task duration on the Schedule chart.

ES The Early Start Date calculated for the task.

EF The Early Finish Date calculated for the task.

LS The Late Start Date calculated for the task.

LF The Late Finish Date calculated for the task.

Fixed Cost Fixed costs calculated for the task.

Rsrce Cost Total cost for all resources associated with the task.

Total Cost Total cost calculated for the task.

Resource 1 through **Resource 5** The names of the first five resources used by the task.

To Display the Task Table:

1► Open the **Chart** menu and choose **Task Table**.

Getting An Existing Chart

In order to update, revise, review, and print an existing LisaProject chart, you have to retrieve it from its filing location.

When you create a chart, you must put it away and save it so that you can go back and retrieve it.

Once a chart has been saved and put away, you can retrieve it at anytime. Retrieving a chart is the first step before you can change it.

To Get an Existing Chart:

1► Select the disk or diskette by clicking once on its icon.

2► Open the **File/Print** menu and choose **Open "Disk"** or **Open "Diskette"**.

3► If you have filed the chart in a folder, click once on the folder's icon.

4► If the chart is in a folder, open the **File/Print** menu and choose **Open "Your Folder"**.

5► Select the chart by clicking once on its icon.

6► Open the **File/Print** menu and choose **Open "Your Chart"**.

For a shortcut to getting an existing list, see Shortcuts and Alternatives later in this chapter.

Basic Editing Operations

The basic editing operations allow you to revise, or edit, entries in LisaProject tables and charts. You can edit any text, a field in a table, a label on a chart, or any title or subtitle in the same way. You can:

- Change a complete label or field entry or part of an entry.
- Insert additional text in a label or field entry.
- Cancel an editing operation by undoing the last change or restoring the previous entry.

The information on the following pages describes these procedures as applied to editing with LisaProject. For complete information on Lisa editing operations, see Chapter 3 in the *Lisa Office System* manual.

Changing a Label or a Field Entry

Changing an entry or label replaces the current selection with the new information you type. You can change the complete label or entry or part of a label or entry.

Changing a Label

You can change any label or title on a chart while it is displayed. You can change the complete label or part of a label.

To Change an Entire Label:

1 ▸ Select the label by clicking twice to select a word; three times to select an entire line.

2 ▸ Type the new label.

To Change Part of a Label:

1 ▸ Set the insertion point at the beginning of the text you want to change.

2 ▸ Press and drag through the text you want to change.

3 ▸ Type the new text.

Changing a Field Entry

You can change all or part of a field entry any time a table is displayed. You cannot edit the fields that are calculated by LisaProject.

To Change an Entire Entry:

1 ▸ Select the field.

2 ▸ Type the new entry.

To Change Part of an Entry:

1 ▸ Select the field.

2 ▸ Set the insertion point at the place where you want to make a change.

3 ▸ Press and drag through the part you want to change.

4 ▸ Type the new text.

Deleting Text

You can delete labels or field entries in the same way.

To Delete Any Text:

1 ▸ Select the text.

2 ▸ Open the **Edit** menu and choose **Cut**.

Cancelling a Change

When you make a change to any text, you can cancel the change while the text is still selected. You can undo the last change.

When you undo the last change, the very last change you made to the text is undone, or canceled. It is as if you never made the last change. This is useful when you have unintentionally made a change.

You can undo any of the following operations:

- Copy
- Cut
- Paste

If LisaProject cannot undo the last change, a message is displayed.

To Undo the Last Change:

1 ▸ Open the **Edit** menu and choose **Undo Last Change**.

Revising a Chart

Once you have created a LisaProject chart, you will probably want to revise it. You can change a chart by inserting, deleting, or rearranging task boxes or milestone circles. In addition, you can change any text on the chart. You can insert, delete, copy, or type over existing labels or a chart title or a subtitle. (See Basic Editing Operations.)

When you revise a LisaProject chart, you are changing a Schedule chart, not a Resource chart or Task chart. However, changes made to a Schedule chart are automatically transferred to the associated Task and Resource charts.

To change a chart you may use several LisaProject functions. These are:

- Moving boxes and circles.
- Deleting and drawing connecting lines.
- Adding and previewing a page.
- Reducing to fit.
- Drawing and labeling the new boxes or circles.

The way you use these functions and the number of them you use depends on the extent of the changes you want to make to a chart.

Moving a Task Box or a Milestone Circle

You can change the position of a task box or milestone circle at any time. You can move a task box or milestone circle in any direction on the chart. Moving tasks and milestones is necessary initially to arrange them on the chart, and then later, when revising a chart, to change the sequence of tasks or to insert new tasks.

You can move a task or milestone before it is connected or after it has been connected to another task or milestone. If it has already been connected to another task or milestone, you cannot move it past the next object to the right or left because this would change the dependency relationship.

You can move a task or milestone before or after labeling it. If a box is connected, the connecting line moves with the box, expanding, reducing, or changing angle to accommodate the move.

To Move a Task Box or a Milestone Circle:

1 ▸ Select the task box or milestone circle by moving the pointer, ↖, onto the edge of the task box or milestone circle and clicking the mouse button once. Avoid touching any of the square handles.

2 ▸ Press and hold down the mouse button while moving the pointer to the new location. A ghost image of the box or circle follows the pointer. Release the mouse button when the box is in the right position on the chart.

Expanding or Reducing the Size of a Task or A Milestone

You can expand or reduce a task box or a milestone circle after it has been drawn. This is usually done to improve the appearance of a chart.

You can change the width or height of a task box or the size of a milestone circle at any time. You can change the size of a task or milestone while it is displayed on the screen in actual size or reduced size. (See Viewing a Schedule Chart.)

You can change a task or milestone before or after it has been labeled. If it has been labeled, however, you cannot reduce it smaller than the existing labels allow. You do not need to expand a task or milestone to insert or add additional text. Task boxes and milestone circles expand automatically to accommodate any additions. However, if you delete text, the box or circle is not reduced.

To Expand or Reduce a Task Box or Milestone Circle:

1 ▸ Select the object.

2 ▸ Move the pointer, , onto any of the dark, square handles on the outline of the task or milestone.

3 ▸ Press and hold the mouse button down and push or pull the pointer to change the width or height of the task or milestone. When it is the size you want, release the mouse button.

Deleting a Task or Milestone

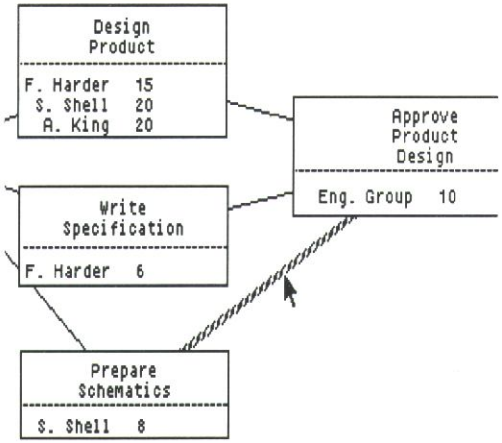
You can erase a task box or milestone circle on your chart at any time. Do this when you are revising a chart to delete a project activity.

When you delete a task box or milestone circle, LisaProject automatically deletes any connecting lines that have been drawn to or from it. For this reason, you need to redraw connecting lines after deleting a task or milestone so that the project schedule can be recalculated.

You cannot delete groups of objects or an entire LisaProject chart at one time. To delete an entire chart you must close it and move it to the Wastebasket. See the *Lisa Office System* manual for information about the Wastebasket.

To Delete a Task Box, Milestone Circle or Connecting Line:

1 ▸ Select the task, milestone, or line you want to delete by moving the pointer, , to the outline of the task or milestone, or to the line of an arrow, and clicking the mouse button once.



▶▶▶

2▸ Open the **Edit** menu and choose the **Cut** option.

When you cut an object it is placed on the Clipboard where it remains until you cut or copy another object.

Copying a Task or Milestone

You can copy a task box or milestone circle on a LisaProject chart. When you copy, you have duplicate objects in two locations.

You can copy a task box or milestone circle to a new location on a chart before or after it has been labeled. Labels are copied with a task or a milestone.

You can copy a box or circle that is connected to another object. No connecting lines are copied with the object, nor is any connection made when you paste the copy to the new location. For this reason you need to draw connecting lines and set scheduled dates, if necessary, after you have copied a box or circle.

You can copy an entire LisaProject chart, schedule, task, or resource, and move it to a LisaDraw document. You cannot, however, copy it back to LisaProject. You can also make multiple versions of the same chart. For example, you could draw and label a chart with the task names only and then copy it. In this way you could come up with a simple chart for small projects performed on a regular basis.

To Copy a Task Box or a Milestone Circle:

1▸ Select the object you want to copy by moving the pointer, , to the outline of the task or milestone and clicking the mouse button once.

2▸ Open the **Edit** menu and choose **Copy**.

3▸ Select the location to which you want to copy the task or milestone by moving the drawing pointer to the place on the chart where you want to paste the duplicate and clicking the mouse button once.

4▸ Open the **Edit** menu and choose **Paste**.

Changing Connecting Lines

You can change the relationship between objects on a LisaProject chart by changing the connecting lines or arrows.

You may want to change connecting lines as a project develops to indicate a change in the relationship between two tasks or when you insert a new task box or milestone circle. It is not necessary to change connecting lines when you move a task box that is connected to another object. The line expands or reduces automatically to accommodate the new position of the object.

To Change a Connecting Line:

1 ▶ Select the connecting line.

2 ▶ Open the **Edit** menu and choose **Cut** option.

3 ▶ Redraw the connecting line.

Inserting A Task or Milestone

You can add a task box or a milestone circle to an existing chart.

To insert a new box or circle or group of boxes and circles, you must create space in your chart. Do this by moving the existing boxes and circles. If your chart extends beyond one page, you can reduce the chart to fit on the screen so you can see where to position the new boxes and circles. If you are adding several new boxes, you may need to add a page. Once you've done this, you may want to preview pages to give you a clearer idea of your position on the chart.

To Insert Task Boxes or Milestone Circles:

1 ▶ Create enough space on the existing chart for the new boxes or circles.

Note: If you cannot open up enough space by moving objects, you may have to create a new page, move the existing objects onto the new page, and then begin inserting new objects on the original page.

2 ▶ Draw the new task boxes.

3 ▶ Draw any milestone circles.

4 ▶ Connect all boxes and circles.

5 ▶ If you have reduced the chart, you must return it to its actual size before you can label it.

6 ▶ Label all boxes and circles.

7 ▶ Set scheduled dates if necessary.

Changing Label Appearance

Text on a LisaProject chart can be displayed on the screen in a wide selection of type styles. All labels for task boxes and milestone circles must be the same; however, you can select a different type style for the title and subtitle.

Type style refers to the type face and type size in which the type is displayed. You can choose either Classic or Modern typeface. Text can be displayed bold, underlined, italic, or plain. Text is displayed in 15-pitch type when you tear off a piece of LisaProject stationery. Pitch refers only to width. "Fifteen pitch" means that 15 characters are printed per inch.

Charts can be displayed in any 15 or 20 pitch font. Titles and Subtitles can be displayed in any font. When you change the type style, any new text that is added to the chart appears in the new style.

When you change the appearance of text, LisaProject reduces or expands the task boxes or the milestone circles to accommodate the size of the new type style.

To change the type size for printing, you need a dot matrix printer or a daisy wheel printer capable of printing in different type sizes. (See the *Lisa Office System* manual.)

To Change the Appearance of Chart Labels:

1 ▸ Open the **Edit** menu and choose **Select All Of Document**.

2 ▸ Open the **Type Style** menu and choose the type style you want to display.

To Change the Appearance of the Title and Subtitle:

1 ▸ Select the text you want to change.

2 ▸ Open the **Type Style** menu and choose the type style you want to display.

Using LisaProject with Other Applications

After you have created a LisaProject chart you can use all or part of the chart with other Lisa applications. You can use LisaProject with:

- LisaDraw
- LisaCalc
- LisaList
- LisaWrite
- LisaGraph

Using LisaProject with any of these operations involves copying the chart or any of the associated tables onto the clipboard and pasting it into the new document, spreadsheet, list, or drawing.

You cannot copy information from other applications into LisaProject.

Copying Information from LisaProject

Each project has three charts and three tables associated with it. When you use LisaProject with other applications, you copy all of the table or chart you select to the new document. You cannot copy parts of a chart or table.

From LisaProject to LisaDraw

You can copy the Schedule chart, Resource chart, or Task chart of any project from LisaProject to LisaDraw. Once the chart has been pasted into a LisaDraw document, you can use any of the LisaDraw features to change the appearance of the chart.

From LisaProject to LisaList

You can copy the Cash Flow Table and the Task Table from LisaProject to LisaList. You must copy the entire table; you cannot select individual columns or rows. Only the data is copied to the new list. The table title, subtitle, and column and row labels are automatically removed.

Before you copy a LisaProject table into a list, you must first set up the list on the Create table and then choose **Show New List** from the **List** menu. You cannot create a new list by pasting into the Create table itself.

When you copy from the Cash Flow Table or Task Table, you must take into account the data type of the columns into which you are pasting the information. The column into which you paste numeric information from LisaProject must have the appropriate data type.

The information you paste into a list will be formatted according to the data format of the column you paste into. For example, if you paste the number 122584 into a column with a data type of Date and a data format of mm/dd/yy, the number will be displayed as 12/25/84. You can make any necessary adjustment to the data format after you have pasted the information.

If the information you paste into the list already has its own format, this format must match the data format of the column you paste into. If LisaList finds incompatible data, a message is displayed. You can then cancel the paste operation or continue. If you continue, the incompatible entry is not pasted and the corresponding field in the list will be blank.

When you paste information into a list, you must be sure there is enough space to accommodate all the columns you are pasting.

From LisaProject to LisaCalc

You can copy a Cash Flow Table or Task Table from LisaProject into LisaCalc. Only the data is copied; the table title, subtitle, and column and row labels are automatically omitted.

When you copy data into a LisaCalc spreadsheet, you can edit the information or perform calculations on the data with any of the LisaCalc functions. For example, you can copy the Cash Flow Table into a spreadsheet, then use the NPV function to calculate the Net Present Value.

From LisaProject to LisaGraph

You can copy the data from a LisaProject Cash Flow Table or Task Table into a LisaGraph Table, edit the information, and generate business graphs.

From LisaProject to LisaWrite

You can copy a Schedule chart, Resource chart, Task chart, Cash Flow Table or Task Table from LisaProject into a LisaWrite document. Only the data is copied. LisaWrite treats each row as a paragraph. The columns are not separated by tabstops, only by spaces.

To Copy Information from LisaProject to Other Applications:

1 ▸ Display the chart or table you want to copy.

2 ▸ Open the **Edit** menu and choose **Select All of Document**.

3 ▸ Open the **Edit** menu and choose **Copy**.

The selected chart or table is placed on the Clipboard.

4 ▸ Open the LisaDraw, LisaList, LisaCalc, or LisaWrite document.

5 ▸ Select a location in the document for the copied information.

6 ▸ Open the **Edit** menu and choose **Paste**.

Shortcuts and Alternatives

The information on the following pages describes shortcuts and alternative methods for performing LisaProject operations. These alternatives have the same result as the methods described throughout the earlier part of this chapter. When you are familiar with using LisaProject, you can choose whichever method is most convenient for you.

Double-Clicking on Icons

When you want to open a LisaProject chart, you can double-click on icons instead of selecting the icon and choosing menu items. You can do this to start a new chart or to open an existing chart.

To Start a New Chart:

1 ▸ Open the disk by double-clicking on its icon.

2 ▸ Tear off a piece of LisaProject paper by double-clicking on the LisaProject paper icon.

3 ▸ Type a name for the new chart.

4 ▸ Double-click on the new chart's icon to open the chart.

To Open an Existing Chart:

1 ▸ Open the disk or diskette by double-clicking on the icon.

2 ▸ If the chart is in a folder, double-click on the folder's icon to open the folder.

3 ▸ Double-click on the chart icon to open the chart.

Apple Key

Using the Apple key lets you select some menu items directly from the keyboard, without using the mouse.

Hold down the Apple key while you type the letter associated with the menu item.

To Select the Entire Drawing:	Hold down the Apple key and type *A*.
To Bold Text:	Hold down the Apple key and type *B*.
To Copy the Current Selection to the Clipboard:	Hold down the Apple key and type *C*.
To Italicize Text:	Hold down the Apple key and type *I*.
To Make Text Plain:	Hold down the Apple key and type *P*.
To Underline Text:	Hold down the Apple key and type *U*.
To Paste the Current Contents of the Clipboard at the Selected Point in the Chart:	Hold down the Apple key and type *V*.
To Cut the Current Selection from the Chart:	Hold down the Apple key and type *X*.

Deleting Text

To Remove Existing Characters in a Line of Text:

You can use the Backspace key to delete text instead of using **Cut**.

1 ▸ Move the pointer to the right of the last character you want to delete.

2 ▸ Set the insertion point by clicking once.

3 ▸ Press the Backspace key.

Moving between Fields

You can use the Tab key or the Return key to move the insertion point between fields on a table or dialog box.

Fixing Common Problems

The information on the following pages describes some common LisaProject problems and solutions. If you experience problems with the Lisa itself, see the *Lisa Office System* manual.

LisaProject Redraws Chart after Each Change

Problem

LisaProject redraws the chart each time you make a change.

Solution

Draw the chart without displaying the dates.

Task or Milestone Changes Shape instead of Moving

Problem

You want to move a task box or milestone circle by selecting and dragging, and its size and shape change instead.

Solution

Be sure the pointer is not placed on a handle.

1 ▸ Choose **Undo Last Change** from the **Edit** menu to return the task or milestone to its original shape.

2 ▸ Select the task or milestone.

3 ▸ Place the pointer on the edge of the task or milestone and drag it to the new location.

Task or Milestone Moves instead of Changing Shape

Problem

You want to change the size of a task or milestone and it moves instead.

Solution

Be sure the pointer is directly on a handle.

1 ▸ Choose **Undo Last Change** from the **Edit** menu to return the task or milestone to its original position.

2 ▸ Select the task or milestone.

3 ▸ Place the pointer on a handle, press and hold down the mouse button, and push or pull the task or milestone to its new size.

Do Not Know the Order in Which Tasks Should Be Performed

Problem

You want to draw a chart, but you are not sure of the order in which some tasks should be performed.

Solution

Draw the tasks and then connect them.

Locating Tasks on a Reduced Chart

Problem

You want to reposition several tasks on a chart which is reduced to fit; however, you cannot locate the tasks.

Solution

Select the task before you reduce the chart.

One Person Working On Several Tasks

Problem

You want one person or resource to work on several tasks at the same time.

Solution

Open the **Customize** menu and choose **Parallel Scheduling**.

▶▶▶

Problem

You want the Cash Flow Table to reflect a payment.

Solution

Enter the payment as a Fixed Cost on the Task Cost Entry Table. Precede the amount with a minus (−) sign.

Chapter 3

LisaProject
Reference

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Introduction

This chapter is an overview and summary of LisaProject. It tells you about LisaProject without emphasizing procedural instructions. Refer to Chapter 2 for complete step-by-step instructions on the tasks you can perform with LisaProject.

You use LisaProject to calculate project schedules and costs. First you draw a chart to identify all project tasks and milestones. You label the tasks to indicate the time it will take to complete the task and the resources that will be assigned to it. Then you enter all calendar dates that are associated with the entire project and all scheduled dates that are associated with individual tasks. Finally you enter resource costs and fixed costs associated with each task.

Once you have entered this information LisaProject calculates start and finish dates for each project task based on one of two methods, parallel scheduling or resource scheduling. In addition, LisaProject calculates project costs.

This chapter is divided into three parts. This first part describes creating a chart and explains how LisaProject calculates a project schedule based on the information you have entered. The second part shows the associated charts that LisaProject creates for you from the chart you create. The third part describes the LisaProject menus and tables.

Creating a Chart

When you create a LisaProject chart, you draw a Schedule chart. LisaProject assumes that a project is made up of interdependent tasks and milestones. You draw a box for each project task and a circle for each project milestone. You show their interdependence by the placement of the tasks on the chart and by connecting the boxes and circles with lines called arrows. Draw tasks on the chart from left to right. Tasks which must be completed before others can begin are to the left. Some tasks can be performed simultaneously. Draw these tasks in parallel. Connect tasks to show the order in which they must be performed.

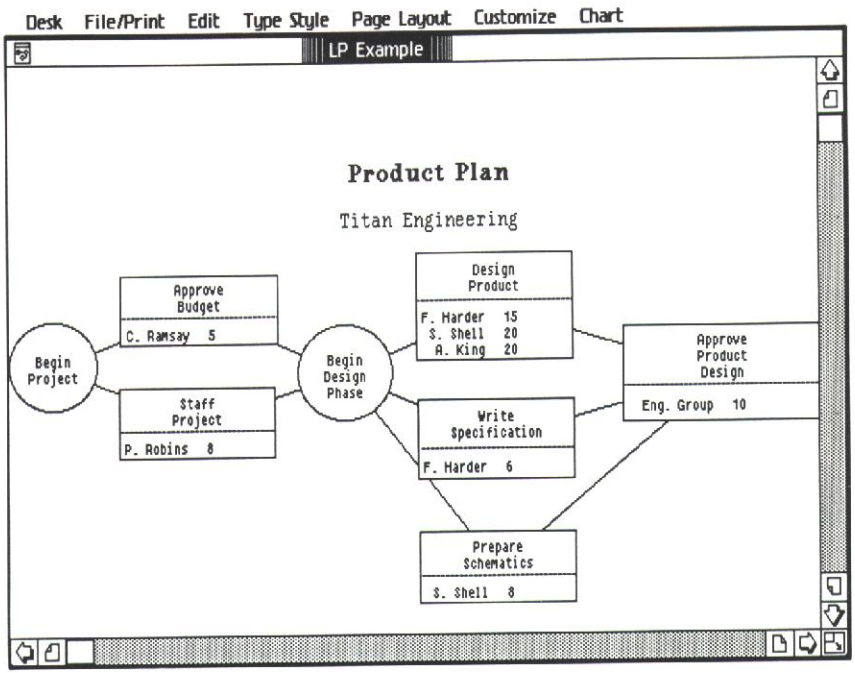
Labeling and Connecting Task Boxes and Milestone Circles

Once drawn, you need to label each task and milestone. Label tasks with a name, resource and duration. Label milestones with a name only. For example, task names might be Write Product Specifications, Test Prototype or Staff Project, and milestone labels might be Start Product Design Phase, Release to Testing, or Prototype Complete.

Tasks are performed by resources. In general, resources are persons; however, they can also be equipment or buildings. Each task can have several resources. When you assign a resource to a task, you associate an amount of time with that resource. This time is called the duration. The duration is the number of days that resource will be used to perform the task. Since you use milestones to indicate major events such as the completion of one phase in a project, you do not assign resources or durations to milestones.

With LisaProject, you can show the dependency between individual tasks by drawing connecting lines. The lines (called arrows) show the sequence in which tasks must be completed. Once arrows have been drawn, you can easily see which tasks must be completed before others can begin.

Once you have drawn, labeled and connected task boxes and milestone circles, your Schedule chart appears as a network of interdependent project activities.



Adding Calendar and Scheduled Dates

After you have drawn and labeled your chart, you add Calendar and Scheduled dates. Calendar dates affect the entire project. Calendar dates are the year(s) during which the project will be scheduled, the number of working days per week, and all non-working holidays. Scheduled dates are dates which you can associate with a specific task or milestone. You can assign a start date or end date to each project task, some tasks or no tasks. Scheduled dates can be added or changed at any time. None of these dates is automatically displayed on a Schedule chart; you must choose to display the dates. Any scheduled dates that cannot be met are shown in shadowed type.

Determining a Project Schedule

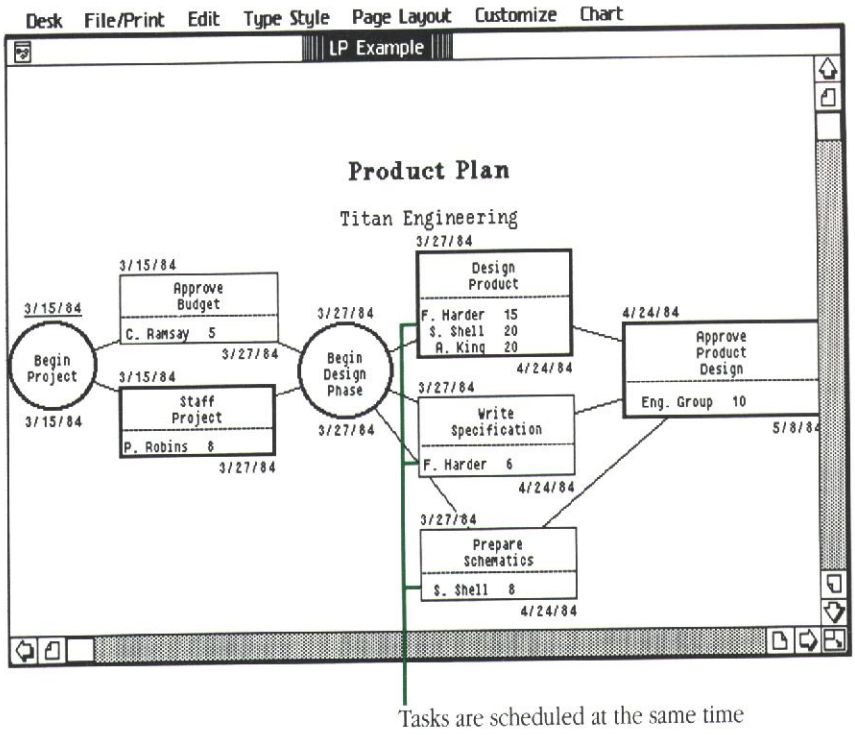
The major role of LisaProject is to calculate a project schedule. LisaProject calculates the schedule by evaluating all the information you have entered on the Schedule chart. Start and finish dates are calculated for each project task on the following basis:

- Where the task is drawn on the chart
- The availability of the resources assigned to the task
- The calendar dates entered, and
- The scheduled dates assigned to the task.

LisaProject calculates start and finish dates using one of two methods: parallel scheduling or resource scheduling. Parallel scheduling assumes that there is an unlimited supply of each resource; therefore, the same resource can be used for two different tasks that are performed simultaneously. This method of scheduling is used automatically by LisaProject. You can, however, select the alternate method of scheduling, resource scheduling. Resource scheduling assumes that resources are limited. A resource can be used for only one task at one time. Therefore, start and finish dates for tasks are calculated as resources become available. Two tasks using the same resource would not be scheduled with the same start and finish dates.

Parallel Scheduling

With parallel scheduling, tasks that are shown being performed at the same time are scheduled in parallel based on the amount of time needed to complete the task without regard for the resources they use. Therefore, LisaProject calculates the start and finish dates solely on the basis of the amount of time needed to complete the task.

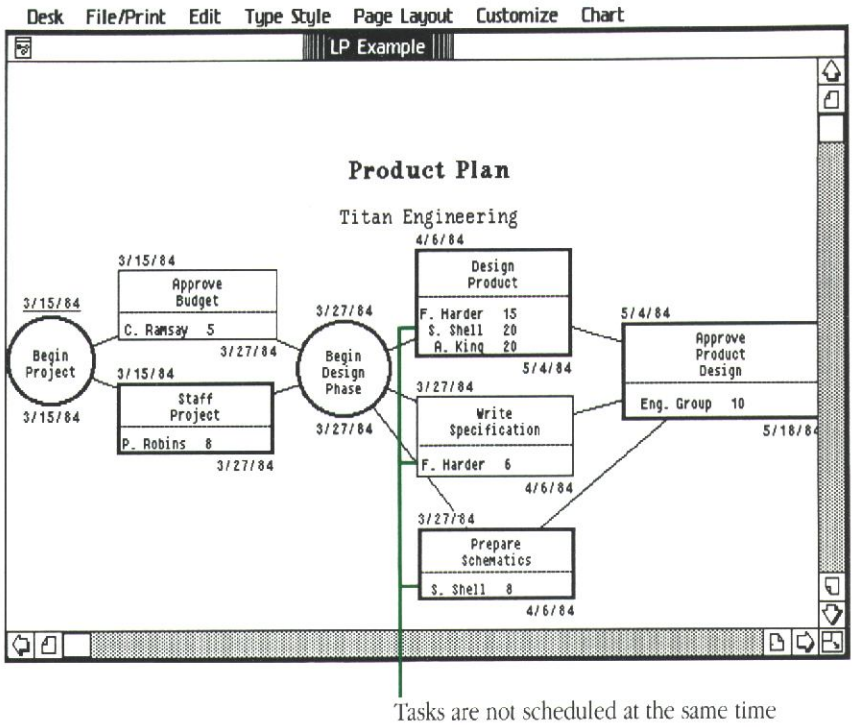


Parallel Scheduling

Resource Scheduling

LisaProject does not use Resource Scheduling unless you select it. When resource scheduling is used, LisaProject looks to see if the same resources are being used for different tasks which are being performed at the same time. If this competition for resources exists, LisaProject will schedule the conflicting tasks one after the other.

To do this, LisaProject evaluates three factors: scheduled dates, duration of the tasks and vertical position on the chart. Scheduled dates are evaluated in the same way they are for parallel scheduling. If a scheduled date is set, LisaProject will try to honor it. If no scheduled dates have been set, LisaProject will schedule the task with the shortest duration first.



Resource Scheduling

If the duration of the parallel tasks is the same, LisaProject will schedule the task with the topmost position on the chart first. It is highly unlikely that this situation will occur; however, if all things are equal, this is the final tie breaker in resource scheduling.

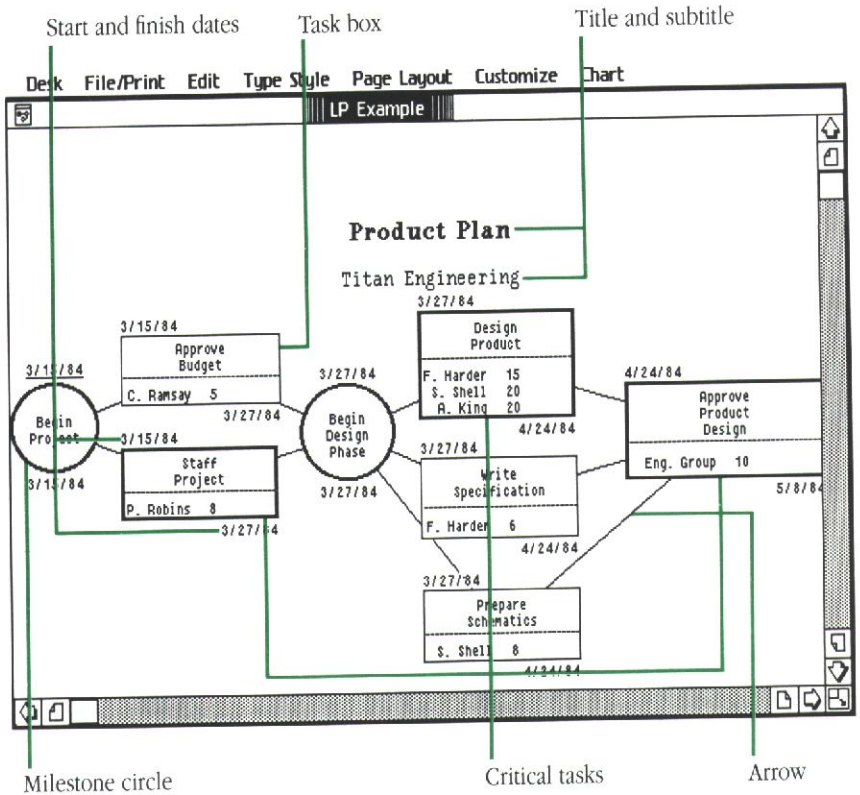
Adding Project Costs

LisaProject calculates cash flow on the basis of the resource costs and fixed costs associated with each task that you enter on the Resource and Task Cost Entry tables. Once this is done, you can display a Task Table that gives you a summary of all fixed and resource costs associated with each task. These tables are automatically created for each chart, and are ready when you want to display them.

LisaProject Charts

Schedule Chart

Shows all project tasks and milestones as a network of interdependent events. Tasks are shown as boxes, milestones are shown as circles. You can associate resources and the amount of time needed to complete the task (the duration) with each task.



A LisaProject Schedule Chart

Task Box Indicates individual project tasks. You label each task box with a name, the resource(s) associated with it, and the number of days it will take to complete the task. You can also associate a scheduled start and finish date with each task, as well as costs for each resource and task.

Milestone Circle Marks the start and end of a project as well as other important project events. You label each milestone with a name; you can also associate start and finish dates with a milestone. You cannot, however, associate resources or days to complete with a milestone.

Arrow Connects all tasks and milestones to indicate their interdependence.

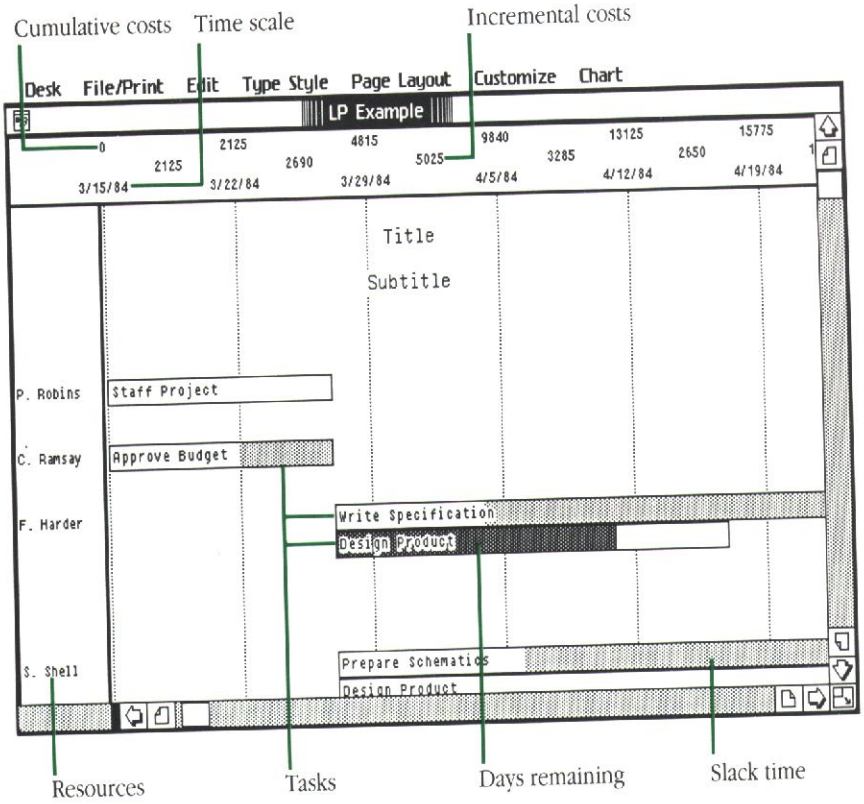
Start and Finish Date Show project schedule. Start and finish date are calculated by LisaProject for each task and milestone unless you set a scheduled date. Scheduled dates are underlined.

Title and Subtitle Name you enter for each LisaProject chart. The area for the title and subtitle is reserved on each piece of LisaProject paper.

Critical Tasks Tasks with the same early and late start and finish date. These tasks have no slack time. If the task start and finish dates are not met, the project end date will change. Critical tasks are displayed with a bold border.

Resource Chart

LisaProject automatically creates a Resource chart for each Schedule chart you draw. The Resource chart shows all the information on the Schedule chart only from a different view. You cannot enter or change any task or milestone information while a Resource chart is displayed. You can however, indicate the Days Remaining to see the project tasks which are behind schedule.



Time Scale Time interval used to display project tasks. One week is automatically used when the chart is first displayed. You can change the time scale to two, four, or eight week intervals.

Slack Time The amount of time between the early and late finish dates for a project task. Tasks which have the same early and late finish dates are called critical tasks.

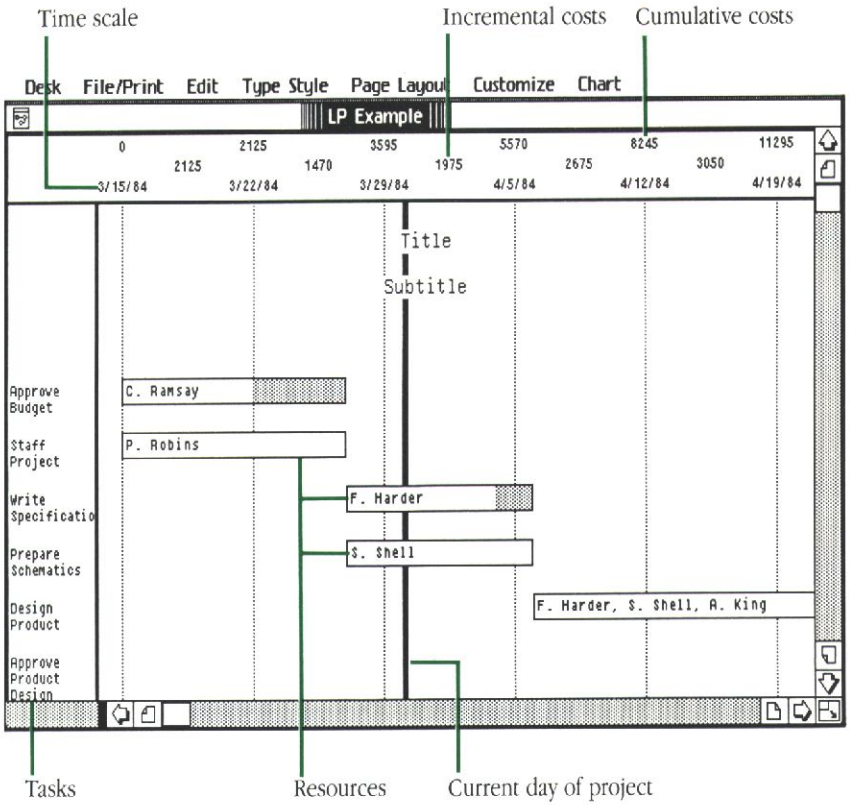
Days Remaining The number of days before a task is scheduled to be finished. Used to indicate if the project is on schedule.

Cumulative Costs The total project costs up to that point.

Incremental Costs The costs added by each task.

Task Chart

Alternate view of a LisaProject Schedule chart. A Task chart is automatically created for each Schedule chart.



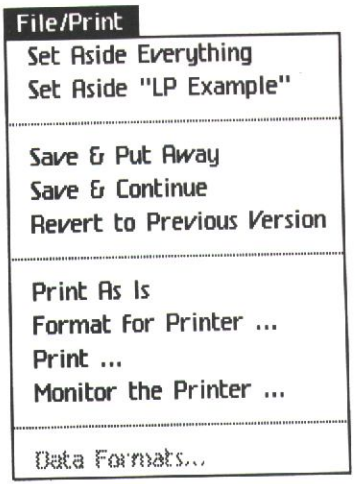
Time Scale Time interval used to display project tasks. One week is automatically used when the chart is first displayed. You can change the time scale to two, four, or eight week intervals.

Current Day of Project A bold vertical line on the Task chart which indicates the day on which you are viewing the chart. By setting the current day of project, you can see which tasks are on schedule.

Incremental Costs The costs added by each task.

Cumulative Costs Total project costs at any given point.

File/Print Menu



Set Aside Everything Returns all documents to their icons without saving the contents.

Set Aside "Your Chart" Returns the current chart to its icon without saving the contents.

Save & Put Away Saves the contents of the chart, and returns its icon to the original location.

Save & Continue Saves the contents of the chart and leaves it open.

Revert to Previous Version Returns the chart to the version that existed when you last saved it.

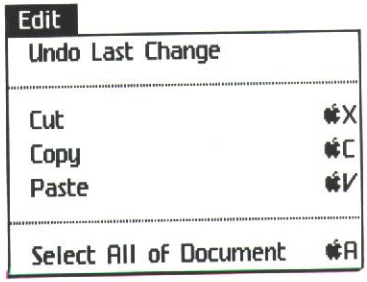
Print As Is Prints the document.

Format for Printer Formats the chart based on the printer that will be used.

Print . . . Displays print dialog box so you can choose print quality, print quantity, and which pages to print.

Monitor the Printer Shows the status of documents that are printing.

Edit Menu



Undo Last Change Reverses the effect of the last change you made to a text entry.

Cut Cuts the current selection from the chart and places it on the Clipboard.

Copy Copies the current selection to the Clipboard.

Paste Pastes whatever is on the Clipboard into the chart at the current selection point.

Select All of Document Selects the entire chart.

Type Style Menu

Plain Text Displays plain text.

Underline Displays text underlined.

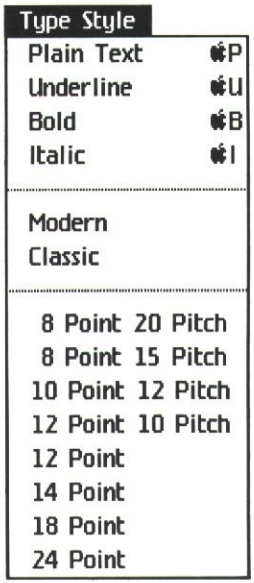
Bold Displays bold text.

Italic Displays italic text.

Modern Displays text in this typeface.

Classic Displays text in this typeface.

Point/Pitch Displays text in this type size.

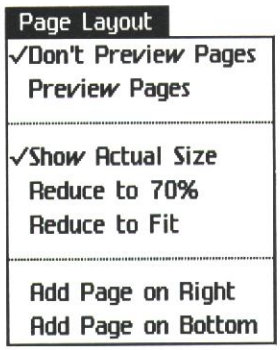


Page Layout Menu

Don't Preview Pages Does not show page boundaries if pages are added to a chart.

Preview Pages Shows page boundaries if pages are added to a chart.

Show Actual Size Displays a LisaProject Schedule chart the size displayed when you create a chart and the size the chart will be printed. This option is in effect when you create a chart.



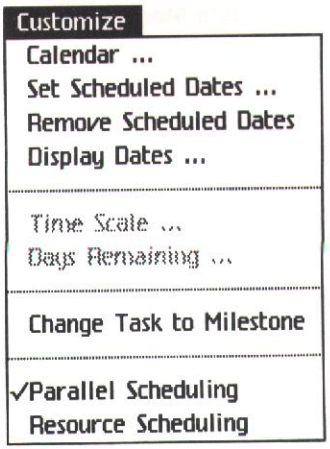
Reduce to 70% Reduces a Schedule chart to 70% so that you can see a larger portion of a chart on the screen at one time. You can reduce large charts several times.

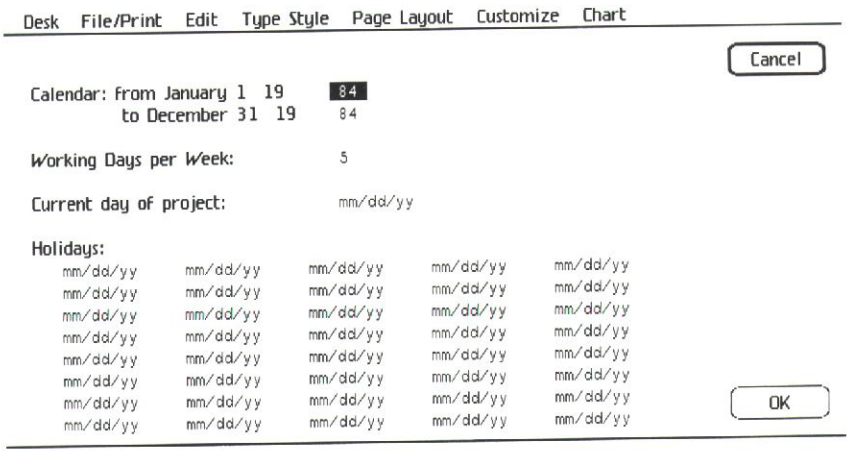
Reduce to Fit Reduces a Schedule chart so that you can see all pages of a Schedule chart on the screen at one time.

Add Page on Right Expands a chart by adding a blank page on the right of the existing page(s).

Add Page on Bottom Expands a chart by adding a blank page on the bottom of the existing page(s).

Calendar Displays the Calendar dialog box which lets you set all calendar dates: the project year(s), the number of working days each week, the current day of the project, and the holidays.





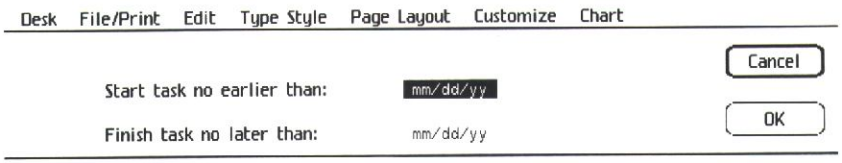
Calendar Year The year or years during which the project will occur. Type the digits of the year in which the project will start and end.

Working Days Per Week The number of working days in each week. Type the number of working days, from 1 to 7.

Current Day of Project The current date. Type the date of the day on which you are viewing the chart.

Holidays Any nonworking days during the work week. Type the date of each holiday.

Set Scheduled Dates Displays the Set Scheduled Dates dialog box which lets you set start and finish dates for any task or milestone.

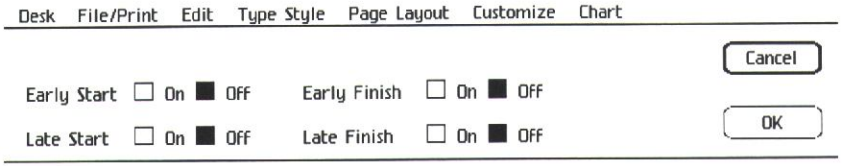


Start Task No Earlier Than The date on which the task is to begin.

Finish Task No Later Than The date on which the task is to end.

Remove Scheduled Dates Removes all scheduled dates that have been set.

Display Dates Displays the Display Dates dialog box which lets you display any of the four start and finish dates that LisaProject calculates for each task and milestone. Scheduled dates are underlined.



Early Start The earliest possible date a task can start.

Late Start The latest possible date a task can finish.

Early Finish The earliest possible date a task can finish.

Late Finish The latest possible date a task can finish without changing the finish date for the entire project.

Time Scale Displays the Time Scale dialog box that lets you change the time scale for Resource and Task charts to two, four, or eight weeks. Charts are displayed with a time scale of one week when they are created.

1 week Sets the time scale to one week.

2 week Sets the time scale to two weeks.

4 week Sets the time scale to four weeks.

8 week Sets the time scale to eight weeks.

Days Remaining Is used to set the remaining work days for any task. Can be set only while a Resource chart is displayed. Lets you see which project tasks are behind schedule.

Change Task to Milestone Changes a task to a milestone.

Parallel Scheduling Calculates a schedule for each task and milestone based on unlimited resources, that is, two or more tasks using the same resource can be scheduled at the same time. Parallel scheduling is used when you create a LisaProject chart (see Determining a Project Schedule).

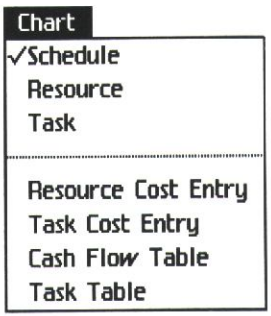
Resource Scheduling Calculates a schedule for each task and milestone based on limited resources, that is, two or more tasks using the same resource will be scheduled one after the other (see Determining a Project Schedule).

Chart Menu

Schedule Displays the Schedule chart for a project.

Resource Displays the Resource chart associated with a project.

Task Displays the Task chart associated with a project.



Resource Cost Entry Displays the Resource Cost Entry Table. Enter the unit cost for each resource.

Resource Name The name of each resource entered on the Schedule chart.

Unit Cost The cost in dollars for each resource for one day.

	Resource Name	Unit Cost
1	P. ROBINS	200
2	C. RAMSAY	225
3	F. HARDER	200
4	S. SHELL	235
5	A. KING	175
6	ENG. GROUP	185
7	ENG. STAFF	500

Task Cost Entry Displays the Task Cost Entry Table which lets you enter fixed costs for each task.

Task Name The name of each task as it appears on the Schedule chart.

Fixed Cost The fixed costs in dollars associated with each task.

	Task Name	Fixed Cost
1	Begin Project	0
2	Staff Project	0
3	Approve Budget	0
4	Begin Design Phase	0
5	Design Product	0
6	Write Specification	0
7	Prepare Schematics	0
8	Approve Product Design	0
9	Begin Development Phase	0
10	Build Prototype	250000
11	Prepare Schedule	0
12	Prepare Test Plan	0
13	Write Evaluation	0
14	Test Product	150000
15	Release to Manufactur	0

Cash Flow Table Displays the cash flow table calculated on the basis of resource costs and task costs for a project. The information is calculated by LisaProject; you cannot enter or change any of the information on the Cash Flow Table.

Start The start date for the first project task.

Incremental The increase in costs between the prior end date and the current start date.

End The end date of the calculation.

Cumulative The total cost of the project up to the current end date.

Start	Incremental	End	Cumulative
3/15/84	2125	3/22/84	2125
3/22/84	2690	3/29/84	4815
3/29/84	5025	4/5/84	9840
4/5/84	3285	4/12/84	13125
4/12/84	2650	4/19/84	15775
4/19/84	1600	4/26/84	17375
4/26/84	925	5/3/84	18300
5/3/84	252775	5/10/84	271075
5/10/84	4675	5/17/84	275750
5/17/84	3875	5/24/84	279625
5/24/84	3675	5/31/84	283300
5/31/84	2500	6/7/84	285800
6/7/84	2500	6/14/84	288300
6/14/84	2500	6/21/84	290800
6/21/84	152720	6/28/84	443520
6/28/84	3050	7/5/84	446570
7/5/84	2350	7/12/84	448920
7/12/84	600	7/19/84	449520

Resource 3 The name of the third resource.

Resource 4 The name of the fourth resource.

Resource 5 The name of the fifth resource.

Apple Key

You can select a menu item directly without using the mouse by using the Apple key in combination with other keys. You can see which keys to use listed next to the menu items. Hold down the Apple key while you type the letter associated with the menu item.

Chart of Apple key combinations

⌘ A	Selects the entire chart.
⌘ B	Makes text bold.
⌘ C	Copies the current selection to the clipboard.
⌘ I	Makes text italics.
⌘ P	Makes text plain.
⌘ U	Underlines text.
⌘ V	Pastes the contents of the clipboard at the selected point in the chart.
⌘ X	Cuts the current selection from the chart.

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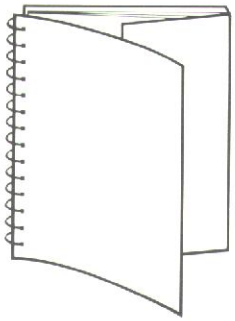

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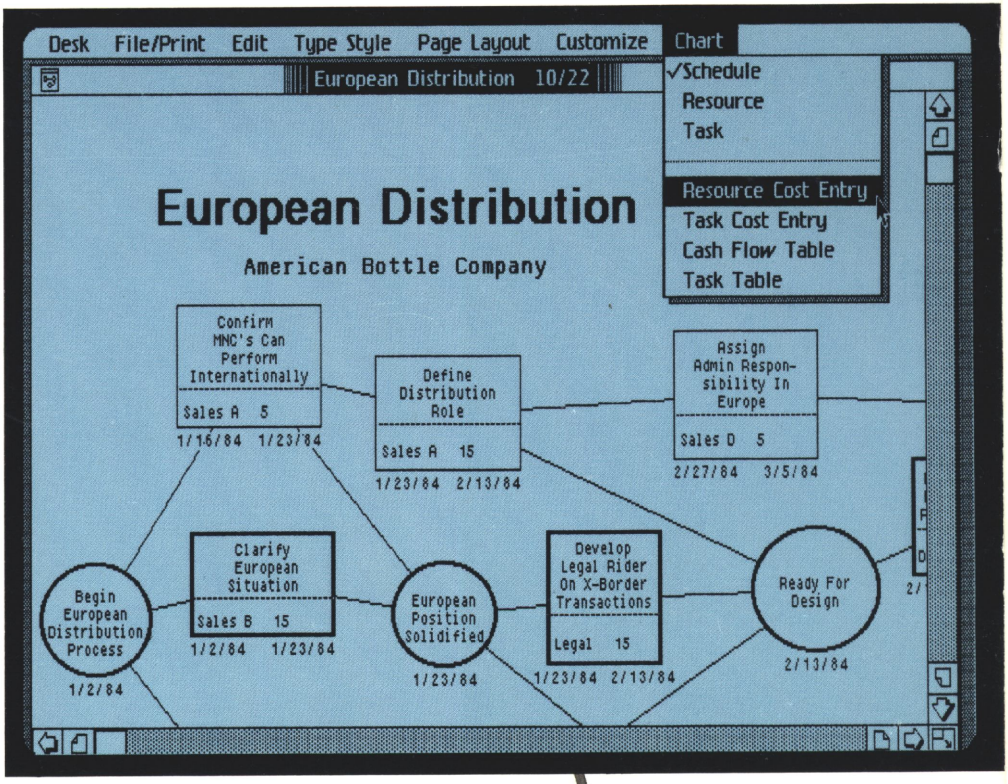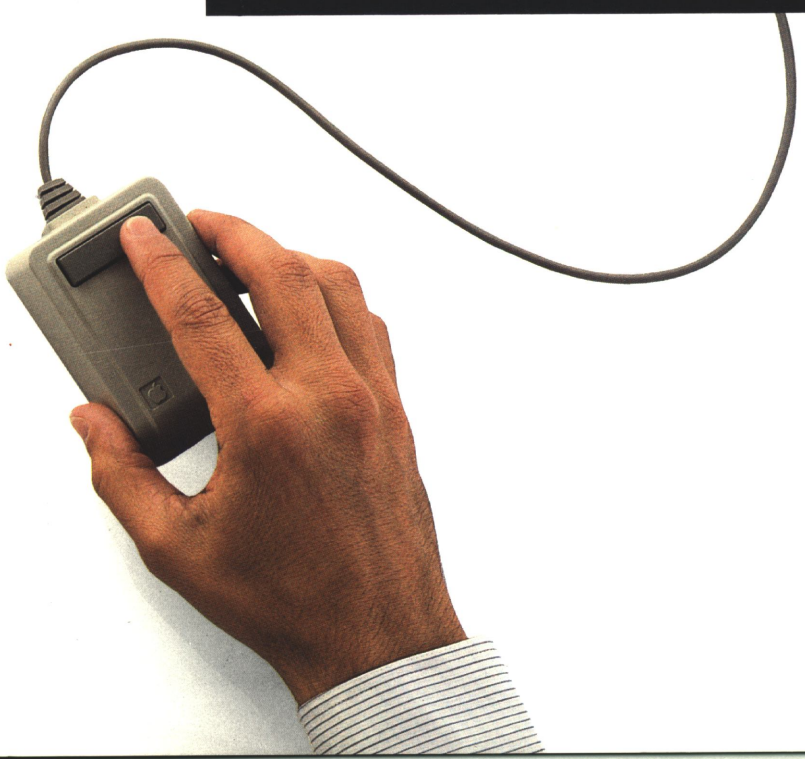
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